

WARE.(J.)

LECTURES ON THEORY AND PRACTICE
[OF MEDICINE.]
COURSE OF 1856-1857.

BOSTON
1857.



W.A.E. (2)

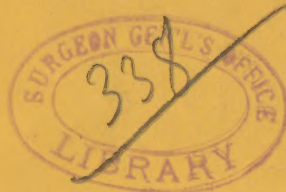
LECTURES ON THEORY AND PRACTICE

(1925-1926-1927)

BOSTON

Dr. John Ware's lectures
on Theory & Practice

1856 - 57



F. H. Brown.

✓

Dr. John Wares Lectures on Course of 1856-57.

Lecture I. Diagnosis - Prognosis

Diagnosis is the determination of the whole course and character of a disease. We must distinguish therapeutical and pathological diagnosis. The first is that by which we determine the treatment of a disease. The second that by which we determine the nature and seat of the morbid condition. We often see cases in which the morbid condition is exactly the same, while the indications for treatment are exactly opposite. Thus, we may have two patients with pneumonia. The pathological diagnosis will be the same in both. One is strong and in full health previous to the attack. The other weak and debilitated. The therapeutical diagnosis in these two cases would be opposite. We may divide symptoms into primary and secondary. The first class, being composed of those arising in the part affected - the second of those arising from the disturbance of the system at large. The first class is particularly important to diagnosis - the second to prognosis and treatment. Diagnosis differs as regards its accuracy. First we may make an absolute diagnosis. This is made by observing certain positive signs. Though ignorance we may mistake the sign - but if the sign is present, the diagnosis is certain. Thus in the eruptive diseases, as small pox - measles, scarlatina. When we distinguish the peculiar eruption we are able to pronounce with certainty upon the nature of the disease. So in affections of the chest, if we hear bronchial respiration, we know there is solidification,

if we hear aegophony we feel certain that a collection of fluid exists
etc. We have, secondly, the probable diagnosis, which varies much
as to its degree of probability. This we make by observing a combination
of symptoms, either one of which taken alone, would indicate nothing,
but taken together are often almost positive. We thus in many cases
distinguish typhoid fever and most acute diseases. Thirdly we make
a diagnosis in which the degree of probability is still less. We can get
no positive sign, nor ^{we do observe} no probable combination of symptoms. We infer
from these symptoms that a disease is such an one, because in no other
way can we explain those symptoms. This may be called the presump-
tive diagnosis. Prognosis - The term is used in too confined a
sense when it is restricted to the predicting the termination of a
disease. In its true sense, it includes an anticipation ^{or rather foreknowledge} of all the events
course, changes, and terminations of a disease. True we cannot in any
case determine all these accurately, or with any near approach to
accuracy, but this should be our aim. It has been said that the reason
why prognosis has become almost proverbially incorrect, is that vital
or physiological laws are much less fixed ^{and unalterable} ~~and are~~ in their action, than
physical laws. I believe this view is incorrect. I think the physiological
law is as certain in its action as the physical law - but like the phys-
ical law ~~it~~ is subject to deviations from its course, by the action of ~~even~~
favorable conditions. These conditions which affect the physiological laws
must be carefully studied, before we can give to prognosis its proper stand.
Viewing the prognosis of a disease in this ~~extended~~ light, it is of great value
in the determining the proper treatment of a disease. An important
principle in the study of prognosis is, that every deviation from the
natural state must be considered as significant, however unimportant
it may be in itself. Thus the rose colored spots in typhoid, are of no

3

might considered by themselves, yet they are often the clue to the real nature of the disease. So the appearance of coagulable lymph on the tonsils, is of little importance in itself, yet it often discloses the existence of true croup. Another important principle is, that every (or nearly every) ~~case~~ case, contains in itself, at whatever time it may be observed, the elements of its future course and character, except so far as it may be modified by circumstances arising during its course. But these modifying influences are constantly arising and it is difficult, to discriminate. Still our aim should be high enough. We make our prognosis as we do our diagnosis, with various degrees of certainty or probability. ~~With~~ many diseases we can make an absolute prognosis - thus we can foretell with certainty a fatal termination to cancer of the viscera, advanced tubercular disease, aneurisms of any of the large internal vessels, as the thoracic or abdominal aorta. Then we make a probable prognosis from a combination of symptoms in many diseases - And thirdly, we often have to make a presumptive ^{or} prognosis - when we predict a favorable termination because we see no reason why the patient should die and vice versa.

Elementary Forms of Disease - There is a popular idea, and one which is not yet wholly discarded by the profession, that every disease is an entity, as is an animal or a plant, and that as every disease is distinct, so there is for each a mode of treatment peculiar to itself. I need hardly tell you this idea is unfounded. As we can, from a few elementary figures multiply numbers to an indefinite extent, so from a few elementary forms of ~~morbid~~ action or condition, arises an almost indefinite number of diseases. Diseases of a very different character may depend on the same elementary morbid condition. Apoplexy and Epistaxis, depend on the same morbid condition - hemorrhage, diarrhoea and catarrh - inflammation of mucous membrane - pericarditis and ~~pharyngitis~~ ^{orchitis} - inflammation of a

serous membranes. The organ affected is important, as regards the influence of the morbid condition. The brain, the heart, the mucous membrane of the intestinal canal, are more important organs, than the mucous membrane of the nose or the serous membrane of the testicles. The mechanical relations of the affected part, materially influence the effect of the morbid state. The blood poured out from the nose readily escapes, while that ~~within~~ the cranium cannot escape. Inflammation of the tonsils affects the general system but little, while the same inflammation but a few lines distant, in the nucha glottidis, often causes death. One cause of the variety of diseases is, that the same elementary form morbid condition may attack different tissues - as inflammation, which may attack nearly all the tissues of the body - 2 - Different elementary forms may coexist, or follow each other in the same disease. Thus in croup, we have first inflammation of the parts about the nucha, and extending to the larynx. We also have, as a consequence of this morbid state, spasm of the muscles of the glottis - As a consequence of this we have congestion of the lungs, and finally effusion of fluid into the air cells. 3. Different elementary forms may, in any given organ, cause the same symptoms. Thus in the lungs, we may have cough, arising from inflammation, presence of foreign bodies, irritation from poisonous gases, sympathy with other organs - And in the stomach we may see nausea and vomiting arising from many causes. Every organ, has, as it were, its own language. 4 - Varieties of disease depend upon the different manner or degree in which the system at large is affected. This, if followed out, would open to us an almost unlimited field of study and observation.

Lecture 11. Elementary Forms of Disease -

Initiation - Deficiency of power or weakness.

In studying disease, we are to keep in view all the elementary forms of disease, which are few in number. Usually some one of these is predominant, rarely one exists alone, generally they are more or less combined in any given disease. And first of Initiation. The term is a vague and indefinite one, and the state it implies is various in its conditions - It implies, an unnatural or increased activity of an organ. The term of functional derangement is sometimes used. The term includes a variety of conditions, not resembling each other in some cases. An organ is deranged, and this derangement can be attributed to no one of the recognized forms of disease, as inflammation, ~~apasm~~, organic disease &c. The organ is then said to be in a state of initiation. This may best be explained by examples. From excessive use of the eye, there often follows pain, not always confined to the ball, but often extending to the orbit, and sometimes ~~extending~~ over a large portion of the head, yet the tissues of the eye are perfect. We can discover no marks of any disease there. This is called initiation of the eye. Again the stomach is said to be in an initable state, when symptoms of a deranged condition, show themselves, as nausea and vomiting, &c, which we can attribute to no actual diseased state of that organ. The uterus is most liable to fall into an ~~initable~~ condition than any other organ. In this state, we have dysmenorrhea, and in the intervals of menstruation, pain, a tender state of the organ, a disordered condition of the neighboring organs, and a strong tendency to abortion, yet, after death, or during life, we can discover no inflammation.

nor any of the forms of disease. The symptoms produced by irritation do not always manifest themselves in the organ affected, but in some other organ. Thus irritation of the abdominal viscera may give rise to sensations in the head. Irritation of the bladder often ~~is~~ shown by a pain in the glans penis. From the irritation caused by piles, we often ~~have~~ pains in the feet and ankles. Irritation of mucous membrane of the nose and ears from worms - of the mammae from irritation of the uterus - and vice versa. Thus, I have often seen bearing down pains in the uterus caused by the sore nipples of nursing women. A whole organ or system of organs, may be thrown into a state of irritation, from some insignificant disease in some portion of the organ or system of organs. Thus a small spot of inflammation in the stomach, the rest of the organ being healthy, will give rise to irritation of the whole organ, or perhaps of the whole alimentary canal. A small tumor at the meatus urinarius, may produce an irritation of the bladder. (I saw a case at the hospital, of a woman ^{presenting some of} ~~showing~~ ~~marked~~ the symptoms of chronic cystitis. Dr. Bowditch treated her for this disease for several weeks, without success, and finally examined the external organs. Around the meatus, he found several granulations, or little red projections, exquisitely tender, on applying to these nitrate of silver, the whole trouble was at once removed.) Again, the whole system may be thrown into a state of irritation, ~~while~~ the irritation is slightly or not at all felt in the part which is really the seat of the trouble. Thus in teething of children where we have ^{few, if any} ~~apparent~~ local symptoms, we often see convulsions, diarrhoea, fever &c. I once had a case of mammary abscess, in a female, which had become a sort of fistula, with a long sinuous outlet. Whenever the discharge of pus was obstructed, marked symptoms of puerperal fever shew themselves. When the discharge again became free all

these symptoms disappeared. And yet there was no pain in the diseased part itself. Irritation existing in a slight degree, and sometimes when considerable, may remain, unchanged by any of the other elementary forms. We often see an irritable condition of the stomach, especially in children and females. Of the same nature is nervous palpitation of the heart, closely resembling organic disease. We can only distinguish these forms by a close examination of the history of the case. The physical signs, the age and sex, nervous palpitation being common and organic disease uncommon in the young of both sexes, more so in females however, and vice versa. Irritation may often be followed by other morbid affections, or it may arise in the course of other diseases. In the latter condition, it often becomes the principal feature of the disease, masking ^{or aneasing} the other symptoms for the time. In drunkards, whatever disease arises, there is a strong tendency to irritation of the brain or stomach. Thus, in pneumonia, in the drunkard, delirium tremens, which I regard as an irritation of the brain, is generally seen. Also, convulsions, which so often occur in diseases of children, as dysentery. Emetic and cathartic medicines will cause convulsions in some children. The state of irritation may be followed by the other elementary forms, as inflammation, spasm, &c. and sometimes, though rarely, by organic disease. There is a difference in organs as to their tendency to become inflamed from irritation. The serous membranes ^{is} much more liable to be thus followed by inflammation than the ~~serous~~ mucous membranes. The eye, the bladder and lungs have a strong tendency to this result, & the stomach and uterus very little. — Deficiency of power in an organ, or weakness A study of this form, is of special importance, in determining the therapeutical diagnosis of a disease. Whistens, again, is used to

express a variety of ~~conditions~~. 1 - It is used to express a want of power in an organ, to perform its function. Thus, the stomach is said to be weak, when it is unable to perform its part in digestion. 2 - To express a liability to disease, as when a person has a strong tendency to take cold, his lungs are said to be weak. 3 - to express a feeling of weakness, which may be caused by real debility, or by ^{acute} ~~acute~~ diseases, when it is rather the result of increased activity. This is not so much an original disease, as the consequence of disease. But when an organ has been over-exercised, and there is a real want of power in that organ, then it may lead to serious disease. The unreal weakness, or the mere sensation of weakness without actual loss of power, is most common. It is often observed at the commencement of many acute diseases, and is the principal phenomenon, the one of which the patient complains most. This form is often relieved by evacuant and depleting remedies. It must be carefully distinguished from the real weakness, as the therapeutical indications are totally different. The first form requires depleting, the second stimulating remedies. We must watch carefully this condition through the whole disease. At the commencement of a disease, we must determine the amount of strength, which the patient has, and as the disease progresses, ^{we must judge} how much of this strength has been exhausted. We have no certain measure of this, but must take into view a variety of considerations. The processes of disease, in typhoid fever, for instance, are less depressing, than those of health. That is, take a person in health, and place him in the same condition as to food, exercise, &c, as the patient with typhoid, and at the end of a given time the first will be much weaker than the last. In some cases, there is very rapid exhaustion of strength, without loss of material, as in protracted vomiting. In other cases, there is rapid diminution of material, as in dysentery, diarrhoea, hæmorrhage &c.

There are two sources of power and activity. 1- That power, whatever may be its nature, derived from the nervous system. 2- the material derived from the blood, without which the nervous influence is diminished or rendered of no avail. The two are mutually dependant on each other, a disturbance of the one affects the other. The restoratives of strength are principally - sleep of the nervous influence - of the material food. by which I mean, everything taken into the stomach. Muscular strength is exhausted, either by removal of the nervous influence, or from want of food. Typhoid fever, is attended by great muscular weakness, chiefly from the disturbance of the nervous influence. But, if, in the course of the disease, any affection of the brain arise, augmenting this nervous influence, even after a state of actual muscular debility has been brought about, the muscular action becomes abnormally strong. The strength of a patient, is partly indicated by this muscular strength in disease - also by the action of the heart, as indicated by the pulse, the state of the digestive function, the condition of the mind. The amount and character of the sleep. In great debility the sleep is sometimes interrupted, but a dangerous symptom is sleep, tending towards coma. The state of the skin, and the capillary circulation must also be taken into the account. We must also look back to the causes of exhaustion. Severe and long continued pain impairs the nervous energy, long continued vomiting, losses of blood, either in large quantities, or in repeated hemorrhage of small amount. Severe purging, especially when accompanied by pain, or dependent upon inflammation, an anxious state of the mind, loss of sleep - influence of depressing agents, as antimony, tobacco, must all be considered in forming our estimate as to the patients state. A sudden sinking of the vital powers,

with great loss of strength, is a most alarming state & symptom.

Lecture 111 Elementary Forces - Continues.

Weakness - Spasm - Congestion -

The question naturally arises, to what is weakness, in any organ ~~owing~~ to be ascribed? We cannot answer this question decidedly. In many cases, it is owing to some imperfection, or degeneration of the structure of the organ, preventing it from performing its function properly. For example, in fatty degeneration of the heart, the action of that organ becomes weak and imperfect. With regard to the danger of exhaustion, that which comes on suddenly, and early in the disease, ^{is attended with less danger} ~~is not so dangerous~~ such is the exhaustion arising from sudden and copious hemorrhage, severe pain, long continued vomiting. Exhaustion arising from these causes is by no means free from danger. There is great danger, that the patient will die from the shock, but if he pass this crisis favorably, we may predict a speedy recovery, which recovery is due to the reserve power of the system. On the contrary, where the exhaustion is gradual, though progressive, arising from the loss of blood at intervals, by diarrhoea and dysentery, with great pain, and in all cases, where the debility is due to causes acting slowly, yet steadily, the danger is very great, and we must predict, either a slow and imperfect recovery, or a fatal termination. In this condition, the reserve power, which we depended on in the first instance, has been exhausted. Spasm - appertains to contractile particles. Abnormal muscular contractions are of two kinds - Clonic - in which the contraction is intermittent, of this variety, are - subcutaneous

tendinous convulsions of hysteria, chorea, epilepsy &c. Clonic spasm, is unattended with pain. The tonic or tetanic spasms are permanent and accompanied by pain. The distinction implied by this definition is incorrect in a measure. Tonic spasms are not permanent, but pass off after a certain interval, and after a certain interval return, so that they are really intermittent. In the clonic spasm, the interval is short in the tonic it is long. Examples of the tonic contraction or spasm are - Tetanus, Cramp, colic &c. The name of spasmodic has been given to certain other muscular actions, in which the mode of action is imperfect, as in severe cough, continuing for a long time, which is called spasmodic or convulsive. The same term is also used, when a want of harmony exists between the several parts of an apparatus, when that want of harmony defeats the end ~~to be obtained~~ for which the apparatus is intended. Thus in vomiting, if the abdominal muscles should not contract, the vomiting ^{must be} is imperfect; it is then called spasmodic or convulsive vomiting. The same thing occurs in cases of severe labour, where the dilatation of the os uteri does not correspond with the contraction of the muscular fibres of the fundus. Inequalities of muscular action, more or less approaching spasm in character and of frequent occurrence in disease, modifying the course of the disease, and of course influencing the treatment. Spasm often constitutes the principal feature of a disease. Though really secondary in its character. It may cause death. Thus in convulsions of children death often is caused by the convulsions, for the previously existing affection may have been very slight. And our treatment must be principally directed to the spasmodic action. That convulsions are often the direct cause of death, is still more clearly shown in Tetanus.

Congestion - Implies the presence of an abnormal amount of blood, in a part, under any conditions. Perhaps no theory has been so popular as that which ascribes so many disturbances of functions to this condition, and yet it is a theory very difficult to prove. Thus a congested state of an organ may exist during life, and yet after death, no abnormal appearances may be discovered. Again the opposite condition may be seen, still more frequently viz. that congestion may be found after death, while during life, no symptoms referable to such a state, have existed. Congestion is often a phenomenon, appearing in the course of a disease, then an original morbid condition. Still, there are cases, where, though it may not be the original, yet it is the only, or the first morbid condition we can appreciate. All inequalities in the distribution of the blood, give rise to congestion. For instance - in disease, the blood often deserts the capillaries, and collects in the large venous trunks, or in the lungs, which is most often the case. The respiration is very difficult, there is a sense of oppression, the heart's action becomes feeble, the brain and senses are torpid, and the secretions dried up. This is seen in the cold stage of intermittent. It may also be caused by powerful mental emotions, as joy, grief, fear, anger, &c. Sometimes this congestion causes death. Generally, however, a corresponding reaction occurs, as is seen for instance, in the hot stage of intermittent. Another familiar example of congestion, is that caused by active exercise, or rather after such exercise in health, and which is owing to the state of the systemic capillaries. A large amount of blood is directed to the muscular system, during exercise, and so long as the exertion continues, there is no disturbance of the system. The

Breathing is hurried but not difficult. But let the exercise cease suddenly, and congestion of the lungs immediately occurs. The systemic capillaries seem to offer an obstacle to the circulation through them, and a wave of blood is thrown back to the left side of the heart, obstructing its action, and therefore causing congestion. If there should be any disease of the heart, death may result from this condition. The same condition may be brought about by any irregularity in the action of the two sides of the heart. Thus, for example, there is disease of the left side, there is a constant tendency to the accumulation of blood in the lungs. And death may occur suddenly, or this condition may cause serious pulmonary disease. It may be asked, why the lungs should be so much more liable to congestion, than any other organ. And it may be thus answered, 1. - The pulmonary circulation is opposed to the systemic, which ~~contains~~ contains much more blood. ~~At~~ In health, the balance between them is kept up, but very slight causes may give rise to a serious disturbance of this harmony. Suppose, (and it is not far from the fact.), the amount of blood contained in the pulmonary circulation, be to that of the systemic circulation as one to four. Then if only one fourth part of the systemic blood be accumulated in the lungs, those organs will contain double their usual amount of blood. On the other hand, if one half of the pulmonary blood be accumulated in the systemic circulation, the quantity of blood is only increased one eighth. 2. The blood contained in the pulmonary circulation, is not intended for the nutrition of those organs, but to undergo exposure to the air. It is a load to be carried by those organs - and this is ^{the reason} why bleeding, temporarily, relieves dyspnoea. It relieves the lungs of their load, just as an emetic relieves the stomach of an oppressive load. But this treatment is deceptive. It really exerts

but little curative influence.

Section IV - Congestion - Inflammation

We may divide congestion into three kinds - active - passive - mechanical, to which perhaps, a fourth kind might be added - viz. Cadaveric. And first of the active form. The capillaries are not passive agents in the circulation of the blood, but have a will or power of their own. They may refuse to transmit the blood, or may send it on with increased force. On this latter property of the capillary system depends active congestion. Blushing - the glow resulting from active exercise, are forms of the same action, which in disease, constitutes one of the conditions of disease. Many headaches, are doubtless dependent on this condition of the brain. When this congestion of the brain is more ~~decided~~ marked, symptoms follow, resembling those of effusion or rupture of the cerebral vessels, but speedily subside with the removal of the cause. Passive congestion depends on the opposite condition of the capillaries. They may admit more blood than they can carry on, or without receiving an unusual quantity of blood, may be unable to carry it onwards, from the loss of their own contractility. Or the capillaries being perfect, there may be an increased momentum of the arterial blood, which would also cause congestion. This passive congestion is often seen, after a long continued increased activity of the circulation. The brain may be affected, as is manifested by delirium, headache &c. - the liver, abdomen, and abdominal organs. Mechanical congestion depends upon an obstacle existing between a given organ and the heart, giving rise to preventing the return of blood. Of this kind ^{is the} ~~are the~~ congestion arising from the pressure of a tumor upon

a vein - of the liver from obstructions of the venae portae &c. The cadaveric
 congestion is dependent upon the mechanical subsidence of blood in
 some cases. In others, we find certain organs in a congested state, while
 others are not. After the heart has ceased to beat, the contractile force of the
 arteries throws the blood into the capillaries, which may themselves con-
 tract in some organs, forcing the blood into the veins, while in others they
 may not, and these latter of course, will be congested. There is a set of
 symptoms arising from a disturbance of the circulation not yet no-
 ticed. More dependent on a deficiency of blood in any organ. These
 phenomena are negative, and therefore apt to be overlooked. In venae
 section, carried to faintness, we have these symptoms, manifesting them-
 selves in various organs. The brain shows itself affected, by tremulousness,
 black specks - deficient power of using words - vertigo. The respiration is
 oppressed and sighing. There is often nausea and vomiting, and there
 may be involuntary discharges. These symptoms arise from a general
 loss of blood. Therefore they may arise ^{in a} more or less modified ^{form from} ~~by~~ ^{the} deficiency
 of blood in any particular organ. An excess of blood in one part, involves
 a deficiency in another. Thus, if a person, in a very weak state, suddenly
 rise on end, syncope is produced. And these considerations explain the
 often acute symptoms persons present: who have lost a large amount of
 blood, without any perceptible lesion remaining. We often see, in these cases,
 violent headaches - chills - pains - nervous sensations, variety in the secretions
 all these symptoms varying, exuberantly and capriciously. I think the
 explanation of this condition is this. The quantity of blood in the system
 is too small to give to each organ its full supply. Each organ however is
 sucking the required supply, which it cannot obtain, except at the ex-
 pense of other organs. - Inflammation. We now come to something
 tangible, something which implies change of structure. Essentially

inflammation is the same thing, in all affections, but the processes in which it consists, are modified by different textures, and different parts. Any one of these processes may exist alone, constituting inflammation. And the order in which they follow varies. I describe the processes in the order they most frequently observe. First we have the presence of an increased quantity of blood with swelling of the part, not wholly due to the fulness of blood however - Second - The effusion of a thin serous fluid into the inflamed part. The consequences of this effusion vary in different textures. In the cellular membrane, it enters into the cells, adding to the swollen condition of the part. In the serous membranes it does not enter into the ^{tissue} part itself - but is secreted into a closed cavity. Instances of this are seen in Pleurisy - Peritonitis - &c. In the mucous membrane it is secreted on a free surface, and discharged through the natural outlets, as in bronchitis - Catarrh, diarrhoea &c. In the skin, the cuticle is raised, confining the fluid, as in a common blister & certain cutaneous diseases. ^{Third} Effusion of lymph, or the plastic material of the blood, is often contemporaneous with the effusion of serum, especially in the cellular and serous membranes. In the ~~serous~~ ^{cellular} membranes, it enters into the tissue itself, adding to the swelling, and causing the hardness. In the serous membranes, it is always simultaneous with the liquid effusion. It covers the ^{inflamed} surface in a layer of greater or less thickness, and sometimes is found floating in flakes in the liquid. It sometimes coats the mucous membrane, as in croup, angina diphtheria, &c. It tends to be discharged from the body, ^{some times} in dysentery, (and these cases are the most severe) - it is passed mixed with blood. In the skin - it is sometimes formed when a blister is applied to a recently vesicated surface, causing what the nurses call the jelly blister. It is also formed in some cutaneous affections. Fourth - Suppuration. The characters of pus are

too well known to you to require a minute description. It is a thick whitish yellow, creamy fluid. This process also varies in different parts. In the cellular membrane, after the serous and fibrinous exudations, the formation of pus commences in the centre of the mass, forming an abscess, limited generally, by the gluing together of the surrounding cells by lymph. In the serous membranes, the process, if it takes place, is usually limited by old adhesions. In the mucous membranes, it is evacuated. When the lymphatic exudation has taken place, pus is formed under the false membrane raising it from the mucous membrane below, and throwing it off. This is the natural mode of cure in croup. In the skin it occurs in many of the affections of that tissue. Suppuration is usually one of the late processes of inflammation. The question has been raised, whether it may not occur independently. It often forms very rapidly, and without any sign of inflammation in the part where it is found. Probably, however, pus has been absorbed, from some internal disease, and deposited in the part. In this way, the presence of pus in the centre of coagula, may be accounted for. ~~Fifth~~ - Ulceration - Usually, connected with suppuration. In the cellular membrane, its healthy office is ~~to absorb~~ to evacuate the pus. There is an instinctive tendency to ulcerate towards a free surface [By this ulceration, I do not mean a healthy process by which a part is removed from the system as in slough, which is rather a consequence than a process of inflammation]

Lecture V. Inflammation

Sixth - The next process of inflammation is softening, though, more properly, it is a consequence of the inflamed condition, and is caused by the arrest of circulation, by the morbid affection. Seventh - Mortification, or Gangrene. This is the death of a part, but a very different thing from general death.

In dying, the part undergoes certain changes, which changes are due to the action of vital laws, and which the same part does not go through in general death. Let us look at the process as it occurs in the cellular tissue, for example. The inflammatory swelling, becomes flattened, and its color changes from bright red, to a darker or more livid hue. The surrounding parts become much more oedematous, and the cuticle is raised into blisters, containing a dark sanguinous fluid. The circulation of the part becomes slower, and slower, it changes to a greenish, and finally to a black color. Now these changes are the result of vital laws. The tissue, present no such appearances in general death. After passing through these changes the part is dead, and obeys the ordinary laws of dead matter. When general death does not follow, the dead part is separated from the living by ulceration. All these processes of inflammation are destructive processes. They all give rise to conditions of the part in which they exist, a step farther from the healthy condition. In a word, they are progressive. There are another set of processes, which are of the opposite character, their end being, to restore, as far as possible, the diseased part to the normal condition. And first, Granulation, which is the process by which cavities are filled. Second, Adhesion or organization. Where a large effusion of lymph exists in a closed cavity, as in the pericardium, or pleura, it acts as a foreign body. It cannot be absorbed - it cannot be thrown off - the only remedy is to make it a ^{living} part of the system. And this is done by organization. This process is confined to the serous and cellular tissues. Effusions of lymph on the mucous membranes have no tendency to organization, because there is no need of it - it is thrown off, as any other foreign body would be. It is true that adhesions do take place in parts naturally covered by mucous membrane, as the vagina and anus - But here, the mucous surfaces do not adhere - The mucous mem -

trace has been destroyed, leaving the cellular texture exposed, and
 then, the adhesive process goes on. Third Cicatrization is only
 a part of the process of organization being the formation of a cutaneous
 covering to those parts which require it. The cicatrix is not true skin, it
 is of a fibrous character, but this ~~ends~~^{approaches}, as time passes more and more,
 the structure of true skin. Then we must consider, as a practical point
 of no little importance, the process of healing under a scab. When an
 open surface is exposed to the air, the secretions of the part dry, and harden
 forming a scab, to protect them from the atmosphere. Many ~~wounds~~ heal much
 better in this way, than in any other, and sometimes where they will not
 heal under any other circumstances. The process is rapidly accomplished
 by this method. Many blisters, for instance, refuse to heal with the ordinary
 dressings. It is best to expose them freely to the air, to induce the formation
 of a scab. Sore nipples will often heal in this way, when they refuse to in
 any other. In some cases, this scab is formed on the mucous membrane,
 as in the nasal passages. Sometimes it is advisable to promote the forma-
 tion of the scab, by scattering on the raw surface, some fine dry powder
 of which, the best, perhaps, is very finely levigated impure carbonate of
 zinc. We have now described all the processes of inflammation.
 They are subject to an almost endless variety, in their order, duration,
 severity, character, ~~and also to the presence of all of them.~~ ^{or} An inflamed
 part may stop short in any stage, and remain stationary for a long time.
 Or it may thus be checked, and afterwards retrograde. Any stage may
 be almost indefinitely prolonged. Some of the causes which give rise
 to this variety are. The constitutional tendencies to disease or diatheses.
 If a person has a tendency to Erysipelas, inflammation occurring in any
 part, will have a peculiar character. In the cellular membrane, the effused
 lymph is not of a plastic character, and has no tendency to form cir-

circumscribed abscesses, but the ~~pus~~^{suppuration} is diffused. The inflammation is
 said to be erysipelatous. We see in the puerperium, the same tendency
 to disregard the ordinary laws of inflammation, and to take on
 a new specific character. In the scrofulous constitution, there is
 a tendency to an imperfection of all the processes, both destructive
 and restorative. In inflammation of the cervical glands, for instance,
 in this condition of the system, lymph is not effused, but a gelati-
 nous substance, which is very slowly separated by suppuration,
 leaving a ragged cavity, which is very slowly and imperfectly filled
 up by granulations, and cicatrizes, often giving rise to serious def-
 ormity. The gleet, or rheumatic diatheses, modify the inflammatory
 action. The proper seat of this specific inflammation is in the fibrous
 tissues. It also does not tend to go on to the ulterior stages. Gen-
 erally it does not go beyond the stage of congestion, very rarely to
 any more advanced stage than effusion. It has also a strong migratory
 tendency, that is, to suddenly leave one part, (of the same tissue) apparently
 healthy, and attack another. When occurring in the fibrous tissues,
 this inflammation constitutes the diseases, rheumatism and
 gout, but we see, that inflammation taking place in other tissues
~~has~~ presents, to a greater or less degree, the same characteristics.
 The oedematous inflammation takes place in persons who are in
 a weak, debilitated state, where there is no specific tendency to disease.
 The processes are imperfect, and tend to mortification. Again
 inflammation is modified by the cause producing it. When it
 is caused by the presence of certain mortal self-propagating poisons,
 as syphilis, &c. it has one character. When it is produced by poisons
 not self-propagating, as croton oil, dogwood, antimony, it has another.
 The inflammation of dypentery, of scarletina, differs from ordinary,

inflammations, and this difference is due to the cause giving rise to the inflammation. As an example of the variations of inflammation let us take those observed in pleurisy. This disease differs widely in severity, in its duration, its symptoms and its effects. By considering the varieties in the processes of inflammation, we may explain this difference. There are cases, when there is a pain in the side, a slight catch in the breathing, a little cough, with no constitutional disturbance, relieved by a blister or a few leeches. Here, the disease has only reached the stage of congestion. Again we may have the symptoms a little more marked, and with more constitutional difficulty. There will be a little delirium, and perhaps a little dyspnoea; all these symptoms, however, disappear in the course of five or six days. Here there has been an effusion of serum, with a ^(doubtful if the lymph is absorbed) very little lymph, which has been absorbed. Again, we have cases in which all the symptoms are more marked, and where there is a large effusion, with a considerable amount of lymph. The patient recovers slowly, and there remains, for months or even years, a tendency to pain, and a tumescence of the parts. Here the effused lymph, must become organized, and this organization connects the two surfaces of the pleura, forming adhesions. Again the pleural sac may be distended with effused ~~serum~~ serum and lymph, compressing the lung along the spine. As the lymph organizes, bands are formed, binding down the lung, so that it cannot recover its original volume. To supply this deficiency, the walls of the chest contract. The abdominal viscera are displaced upwards, the heart, and opposite lung are pushed over beyond the median line, and permanent deformity is produced. Instead of, or rather following the effusion of serum, and lymph, pus may be formed. This will either find its way outwards of itself, or may be artificially evacuated. In connection with tubercular disease of the lungs pleurisy

however mild, ~~recovers~~ recovers very slowly, and imperfectly. So that in an obstinate case of pleurisy, where no sufficient cause exists for this character, should lead us to suspect the existence of tubercle. We have then noticed the variations of the inflammatory process in pleurisy. In almost every disease, we may see as great a variety in these processes.

Lecture VI. Inflammation - Effusion.

Inflammation, as it presents itself to the surgeon, that is, generally, externally, is easily distinguished by the senses - not so, however, in a medical point of view. The physician has to deal with inflammation rather of the internal organs which he cannot see, touch, or measure, and his diagnosis must be rather inferential than direct. Let us now consider, the symptoms of inflammation, restricting ourselves, ~~as hitherto~~, to the process, as it occurs in the practice of the physician. Pain. This is by no means an infallible indication of inflammation. Its chief value is in pointing out the part affected - and here again it may mislead us. The pain, resulting from inflammation in an organ, may not be felt in the organ itself, but in some neighboring organ, or it may be felt in some remote organ, or part. Thus in pleurisy and pneumonia the pain is generally felt in front, while the principal inflammation is behind. Inflammation of the large intestines, kidneys and bladder, often cause pain in the back - of the cervix uteri - in the coccyx - of the ovaries often in the hip joint. Tenderness on pressure is a more valuable indication of inflammation - but we may have tenderness without inflammation and vice versa. The position of the patient, or the decubitus is of some value. He instinctively takes that position which will relieve the inflamed part from the mechanical pressure of the neighboring organs. In inflammation

of external parts, there is increased heat ~~at~~ the part is brought up to the temperature of the blood, or thereabouts. This is only true of the earliest stages of the process. In inflammation of internal parts, there is a sensation of heat. But this is of but little value as a diagnostic indication, as often a inflammation will give rise to this sensation. Those signs dependent on changes of texture, are of more value, and on these, the diagnosis of inflammation mainly depends. There are increase in size, and effusion of serum, lymph, or blood. These are either directly perceived, as in the abdomen, or inferred from the symptoms they give rise to, as is the case, chiefly in the chest, and wholly in the cranium. In the abdomen, any enlargement of an organ, or any effusion into its cavity, causes a corresponding enlargement of the walls of this cavity. This swelling condition of the abdominal parietes prevents, or diminishes, any compression of ~~the~~ ^{the} organs, and ~~the~~ ^{the} interference with their functions. This is not the case in the chest, to any considerable degree. The chest may be somewhat enlarged, but any considerable effusion, or enlargement of any organ, must cause compression of the other organs, and interfere materially with their functions. The cranium is wholly unyielding. The least effusion must compress to a greater or lesser extent the brain. Another enlargement is the sympathetic enlargement, which often occurs in organs not inflamed, where the inflamed part cannot swell ^{readily}, or enlarge. This is what is called vicarious swelling. A simple example is seen in periostitis, where the adjacent tissues, ~~become~~ ^{become} enlarged. Sometimes, inflammation of the neck of the bladder, or of the womb, is attended by swelling, which can only be explained in this way. State of the function of a part. Inflammation interferes more completely and permanently with the function of a part, than any of the morbid processes, hitherto studied. This interference is modified by the seat of the inflammation. The products of inflammation on the ~~free~~ mucous surfaces, are thrown off, and may be found in the

discharges. In the closed cavities, ^{other} they must be disposed of in some way, either by absorption, or organization, and their presence will give rise to more or less disturbance of function of the parts within those cavities. In the abdomen, this disturbance is slight and the presence of these products must be determined by examination. In the chest, the physical signs must be studied. In the cranium, the disturbance of function is greatest, and the symptoms are very marked.

Effusion. Is the production and effusion of a fluid, abnormal either in quantity, in quality, or in the place in which it is effused. This condition embraces a great variety of diseases, only resembling each other in this condition. Such are many dropsies - diabetes, ^{some cases of} diarrhoea and various effusions of blood. These effusions may be the effects of inflammation, but in many cases, they are not. The effects vary, as the effusion takes place from free surfaces, as mucous membrane of alimentary canal, in to closed cavities, as the pleura, or in to the substance of an organ, as in oedema of the lungs. In this condition there is generally some change in the organ, from, or in to which the effusion takes place, but generally, there is some organic disease, in other organs, acting as the remote, and primary cause. For example - in diabetes, there is some change in the secreting apparatus, the kidneys, yet the primary, and efficient cause, is some disease of the assimilating organs. The quality of the fluids effused is various. In some, there appears to be a straining out of the water of the blood, with its salts and a very little animal matter of this nature, are the fluids effused in the hydrocephalus in children. Also unnatural sweats - copious flow of urine, in quantity resembling diabetes, but in quality totally different. This latter phenomenon is often observed in hysterical women, and is generally transient. Of this nature also, are the copious watery discharges

sometimes seen in mania - the sudden effusions into the chest, often causing death, and for which we can discover no cause - of the same kind also, are those effusions which sometimes prove fatal, after scarletina. In others again, there is a kind of vital decomposition of blood, the serum, or liquor sanguinis and red globules being effused. In the third class of effusions - the blood, pure and unaltered is poured out. A fourth class, is the effusions, in abnormal quantity, and through abnormal outlets, of the materials derived from blood. The natural flows of bile - the excretion of sugar through the kidneys in diabetes are of this nature. The third class, viz - hemorrhage, merits particular attention. Hemorrhage may take place from rupture of the vessels. This may be caused by mechanical violence, by ulceration, or as an effect of inflammation. In the latter case, the parts have become softened, and the walls of the vessels partake in the disease, and the force of the circulation completes the rupture. Such are most apoplexies, probably. Another form of apoplexy, is that occurring from primary disease of the walls of the blood vessels, or hemorrhage may take place from the open mouths of vessels, hemorrhage from exhalation as it is called. This only applies to the capillaries, and may be caused by ulceration or mechanical violence. This hemorrhage may be active the capillaries being in that condition mentioned in active congestion, or it may be passive. To illustrate my meaning, I will compare the mouths of the vessels, with the sphincters. In the latter case, if the sphincters become paralyzed we have involuntary discharges. And if the mouths of the capillaries, which are supposed to act as sphincters, lose this contractile power, we have passive hemorrhage. This is often attended with a deficient coagulability of the blood, which makes the hemorrhage much more difficult to stop. Or hemorrhage may be vicarious. Though these cases are not so common as is sometimes stated to be the case. This is seen,

Sometimes in hemorrhage from the nose, the lungs, or from piles, ~~where~~ the menstrual function is suspended - and rarely, in males, in effusion of blood into the brain, from the suppression of bleeding piles. [Hemorrhage can never occur without solution of continuity - that is, effusion of pure, unaltered blood. It would be absurd to suppose that a solid body, like the blood corpuscle, could pass through a membrane by any osmotic action]. Various circumstances modify hemorrhage. In some persons there is a constitutional ~~and~~ hereditary predisposition to hemorrhage. ~~so that~~ The slightest cause, as an abrasion of the skin, or the cutting of the gum, will produce a copious, and often sometimes fatal hemorrhage. In others, there is a tendency to hemorrhage from certain parts, as from the nose &c. In some females, there is a tendency to hemorrhage of blood from the uterus - so that mental emotion, blows upon the abdomen, menstruation and child bearing, will cause most alarming uterine hemorrhage. There is a difference in the tissues of the body, as to their tendency to effusion of blood. The mucous membrane has the strongest tendency, though ~~all~~ hemorrhages from mucous openings are not from the mucous surface. An aneurism of one of the pulmonary vessels may rupture, and discharge through the mouth, or an ulcer of the stomach ~~and~~ or intestine may lay bare a large vessel and give rise to copious or fatal hemorrhage. The effects of the effusion of blood, as to disturbance of function, vary, as in all other effusions with the situation of the effusion. ~~The~~ ^{within} ~~the~~ cranium giving rise to the most alarming, and immediately dangerous symptoms.

Lecture VII- Hemorrhage.

The tendency to hemorrhage varies with age, and sex. In infancy the tendency is slight. When it does occur it is generally from the stomach and bowels, generally the latter, and rarely leads to any serious results. After delivery, there is not unfrequently an effusion of blood under the scalp. In those children, having a tendency to jaundice, this effusion of blood takes place, to a remarkable extent. Blood is effused under the skin in various places. I remember a case, where a large amount of blood was effused into the thigh, where the child ultimately recovered. In childhood, the tendency to hemorrhage is very slight. In youth and early adult life, it becomes stronger, generally in the form of epistaxis or hæmoptysis. This latter form is in by far the greater number of cases connected with tubercles in the lungs. Hemorrhage from the uterus is also common in females, at this period. In adults, there is a strong tendency to hemorrhage from the digestive organs. In females, at the time when the functions of the uterus are ceasing, the hæmorrhagic tendency is strong. The difference between the sexes, throwing aside the generative organs, in this respect, is not very marked. Symptoms of hemorrhage - These vary with the situation and function of the part in which the effusion takes place. In the brain, we have the symptoms of compression - as interference with the mind, labor and stertorous breathing, spasms, or paralysis - &c. These effects are not wholly to be attributed to the compression, but partly to the actual injury done to the brain itself. When the flow of blood is rapid and profuse, it is generally dependent on rupture, when slow and in small quantities upon exhalation. This is not always the case, however. Hemorrhage terminates variously; In the brain it is usually small, and rendered smaller, or wholly re-

restrained by the compression^y itself exerted. Sometimes, it is restrained
 by coagulation in other cases, this effect is brought about by the di-
 minished activity of the small vessels - and in others by the same
 state of the larger arteries, as is the case when syncope takes place.
 When the effused blood is evacuated during life, it is modified by
 the function of the part from which it comes, and by the preexisting
 disease of that part, if there be any. In the lungs, it is immediately co-
 agulated. If there be no disease of those organs, it is ~~pure~~ fluid, and
 unmixed, but if there be any previous disease, it is mixed with the pro-
 ducts of that disease, as pus, mucous, tubercular matter. In the alimentary
 canal, it may be effused unaltered, but generally it is retained, and
 acted upon by the gastric and intestinal fluids, and mixed with the
 products of disease. From the generative organs, there is less change. If it
 be retained long in the vagina, the coagulum assumes almost an or-
 ganized form, ~~the same thing happens often~~ in the cavities of the heart: from the kidneys and
 bladder, it is mixed with urine. I was once consulted by a prostitute,
 who passed daily, after urinating, a gill or more, of pure, liquid blood.
 This continued for several months, finally terminating in fungoid
disease. The effects on the system at large, vary with the function of the
 part, the previous state of the constitution, the amount of blood lost,
 and the rapidity with which it was effused. The system seems cap-
 able of accommodating itself to a gradual loss of blood. In most
 persons, if a pint of blood be drawn, syncope occurs. Now, if another
 pint be immediately drawn, in most cases, death would follow.
 If however, after the first loss, a few hours ~~be~~ allowed to pass, then
 another pint, or half pint may be drawn, causing no more, and often
 less disturbance than the first bleeding. And this may be repeated at
 intervals, to the amount of seven or eight pounds. In the first

case. The supply of blood to the nobler organs is cut off, and death takes place through those organs. In the second, time is given to equalize the circulation, and accustom the organs to the diminished supply. But though the system may endure the loss of blood for a time, and for some time, it finally sinks death taking place from an impaired condition of the whole organism. Death may result from the loss of a sufficient quantity to interfere with some of the vital functions - as occurs in aneurism, sometimes in phthisis, in rupture of the heart, pulmonary, apoplexy &c. In the brain, this occurs without regard to the amount.

Lecture VIII.

Morbid condition of the blood.

The next elementary form of disease, is a morbid state of the blood. We know but little with regard to this point, and for this reason, we should the more carefully and faithfully observe the changes which the blood undergoes in disease. And first, we should notice the phenomena attending its coagulation. To do this, we must have the blood before us - and this can only be done, where blood is drawn as a remedy, which, in these days, is comparatively rare. The coagulation of the blood, is, as you know, a vital process, consisting in the separation of the red corpuscles and fibrin, from the serum, or ~~liquor sanguinis~~ *serum sanguinis*. We should observe the rapidity with which the coagulation takes place. It may coagulate slowly or rapidly. The first, viz the ~~rapid~~ slow coagulation, is supposed to correspond with an inflammatory condition of the system. The second, with a low or typhoid state. Secondly, we should observe the firmness and size of the coagulum. When blood is first drawn, the coagulum is soft and pulpy, but gradually contracts and becomes firmer. When it contracts largely, it indicates an increased power of the system at large. Thus in inflame-

morbid blood, ~~will~~ have the buffy ^{coat} and cupped appearance, which is due
 to the contraction of the clot. The red corpuscles, from some cause, either from
 an increased specific gravity, or from a greater attraction for each other, sink
 rapidly, leaving a portion of the liquor sanguinis (i. e. the serum and fibrin)
 free. This fibrin of the liquor sanguinis coagulates, forming over the red portion
 of the clot, a colorless strata, which is the buffed coat. This from the contraction
 of the whole coagulum, becomes cupped. A soft coagulum is supposed to
 correspond with a low typhoid state of the system, as is the rapid coagulation.
 Thirdly, we should observe the completeness with which the coagulation takes
 place. This varies extremely. In inflammatory diseases, as shown before,
 it is perfect. In diseases of a low, malignant character it is imperfect.
 In persons dying from a stroke of lightning, from a violent blow on
 the stomach, from sudden mental emotions, the blood is found un-
 coagulated or very imperfectly coagulated. (Riker & Paget, page 80, say
 that this is not always the case - that the blood has been found coagulated
 in animals killed by lightning or an electric shock, and in animals
 hunted to death) - Fourthly, we should notice the composition of the blood
 considered as an organic body, and the proportions of the organic
 constituents. In some diseases, there is a deficiency of ^{some of} these elements
 as in Bright's disease the quantity of red corpuscles and of albumen
 is diminished. In ^{sthenic} inflammatory affections, we often see an increase
 in the quantity of fibrin. We should also observe the quality of the blood
 in other respects. For ~~though~~ the organic constituents may be present
 in the right proportions, yet the quality of some or all of them may
 be altered. In connection with disease, the blood must be constantly
 liable to changes in its constitution and quality. Diseased actions
 as well as healthy actions, are supported by the blood. The process of
 disease is only a morbid sort of nutrition. Nutrition implies the

return into the blood of the effete material of the various organs. Now
 when an organ is extensively inflamed, or is in a state of suppuration,
 the blood must be returned in a different state ^{from that organ} from that in which it is
 returned from the same organ in its healthy state. Many changes of the
 secondary effects of disease are probably due to such changes of the
 blood. The red corpuscles are reformed or newly formed, with much more
 difficulty than the other constituents. ~~More~~ see this in the effects of
 remedies, ^{between} bleeding on the one hand, and purging on the other.
 If you abstract blood from the system, there is a loss of all the materials,
 ingredients of the blood, the red corpuscles and the fibrin, as well as the
 serum. In purging, the serum only is removed. And the exhaustion
 following bleeding, is much ~~more~~ more permanent than that following
 upon severe purging; the quality of the blood is modified even by the
 products of healthy decomposition as stated above. The blood is the
 common receptacle of ~~the~~ ^{effete} materials, ~~on~~ the one hand, and of the products
 of assimilation on the other. In what form the products of decomposition
 or waste are combined with the blood, ^{it} is uncertain - probably they are
 circulated with it, in the same form in which they are excreted. This is
 rendered probable from the fact that urea is found as such, in the blood.
 The blood may undergo a wide variation as to its ~~quantitative~~ and
 saline constituents. In chlorosis and anemias, there is a deficiency of
 iron, the presence of which seems necessary to the perfect elaboration of
 the red corpuscles. And it seems probable, that the symptoms which
 sometimes follow the administration of iron, depend upon the presence
 in the blood of too large a quantity of that metal. The effect which
 salt meat has, ~~in~~ causing scurvy, shows the influence of an increase in
 the saline ingredients. As an illustration of ~~the~~ ^{that} ~~the~~ how great an
 extent the blood is affected in disease, scurvy presents itself as the

best. The characteristics of this disease are, a spongy swelling, and bleeding of the gums, loosening of the teeth, ulceration in various parts of the body, maculae, petechiae, oedema, a general want of power, diminution of ~~the~~ animal heat and a strong tendency to rheumatism and internal inflammations. Now in scurvy the blood is altered. It is thin - it coagulates very imperfectly. The proportions of the organic constituents vary: it is dependent on the quality of the blood. The one condition always present is the deficiency of vegetable food. It is this which causes, and the administration of this food which cures. Scurvy, of ^{the} vegetables, potato is the best. It seems to ~~have~~ ^{exert} a specific influence. Next to vegetables, the vegetable acids, as lemon juice, citric acid, &c. Dr. Kane, found that raw fresh meat had a very marked effect in curing the disease. Where the cause of scurvy, viz. the deficiency of vegetable food, is present, scurvy will appear, even though the ^{order} food be of the best kind and the conditions of health, air exercise, cleanliness &c. be complied with, and where these latter conditions are not complied with, and there is plenty of vegetable food, scurvy is never seen. In Ireland, where dirt, poverty and misery abound, so long as the potato was plenty, there was no scurvy, but when the potato disease made its appearance, scurvy became ~~the~~ frequent disease.

We should observe the presence of foreign materials in the blood. These may be the ~~case~~ products of secretion or waste, or of disease, as bile, sugar, urea, pus, vaccine virus, certain poisons. Besides these, substances are admitted which are not the result of any vital action, as the ova of parasitic animals, medicines &c. Finely pulverized charcoal has been taken up by the lacteals and carried to a considerable distance. The blood seems capable of receiving and retaining materials of various and opposite characters, provided they enter per vias

"naturales" but if infected forcibly, may cause more or less irritation. Many cases are explained by supposing a morbid condition of the blood which can be explained in no other way. This explanation is rendered probable by many facts, though we have no direct proof. It is known that the blood of ⁱⁿ scarletina often kills the leeches by which it is drawn. The blood of a patient with malignant fever was injected into the veins of a cat, and caused death in seven hours. The symptoms following dissecting wounds, point to the same thing. Hunter relates the case of a student who cut himself while dissecting a horse which died from glanders. He was soon affected with very strange and anomalous symptoms. Blood from his veins was injected into the veins of a healthy ass, which soon died from glanders. Persons who have at some time been affected with syphilis, often find their offspring at birth similarly affected. ^{Cases have been known in which} The mother, herself ~~proof~~ of a quinsy small pox, has absorbed the poison, and communicated it to the foetus in utero. Musk produces certain effects on some people. The hay fever, and the rose cold, are dependent on the odor of the rose or the hay in the air, though perhaps not ~~sensat~~ perceptible to the senses. It is stated on good authority, that during the prevalence of yellow fever, the blood of healthy persons, exposed to the disease, became imperfectly coagulated after being drawn. Now all these facts, point to the conclusion, that many diseases arise from the introduction of some morbid material into the blood.

Lecture IX. Organic diseases - Constitutional symptoms

The common idea of an organic disease is, that it is a permanent change in the structure of an organ. But this is not a perfect distinction between organic diseases, so called, and other diseases. Inflammation is not an organic disease, yet you can hardly

draw a line between true organic disease and some of the effects of inflammation. The changes of organic disease are said to be permanent yet this does not always hold true. Tubercles, for instance, are often removed in some way, and the lung left in a healthy state - the same also is probably true of some other changes of structure. On the other hand, some of the effects of inflammation are permanent; as contraction and adhesion. Organic disease, seems dependent on two principal causes - an altered action of an organ and an altered nutrition of an organ. Of the first, we have examples of the changes produced in the structure of the heart, the bladder, and the stomach, when the outlet of any of these organs is obstructed. The obstruction causes the organ to take on an increased action and this increased action gives rise to a change of structure, hypertrophy. This cannot properly be called a change of structure - it is rather an increase of structure - Atrophy arises from the opposite condition, and here there is usually, a change of structure. A diverted, or perverted action of an organ, will cause organic disease, even where that action is not increased. Examples of this are seen in the liver and kidneys of drunkards. On an altered nutrition, are dependent the various morbid growths, as tubercle, cancer, tumors, ~~and the~~ as a general rule we look for organic disease late in life. To this rule, tubercle is the only exception. This disease is much more common in early adult life. If a young man, new to come to us, with palpitation of the heart, ~~and~~ difficulty of breathing, shortness of breath on ~~exerting~~ ^{ascending} up hill &c. we should infer, and with tolerable certainty, that the ~~disease~~ ^{affection} was nervous, and not organic. Before we examined the physical signs. Our inference would be still more probable, if the young person were a female. On the other hand, if an old person ~~especially~~ a male, new to complain to us of these symptoms, we should infer that there was some organic change of ~~the~~ the heart. If a young woman

next to apply to us, with symptoms referable to the uterus, we should predict, ^{almost} with certainty, that they were due to some functional disturbance rather than to any change of structure. If, however, the patient be past the menstrual period, we should infer with equal certainty, that the disease was organic, probably malignant in its character. I am of the opinion, that in every individual a tendency to organic disease would show itself, sooner or later, if time permitted. In every man, some one part of the organism will give out sooner than the others, and this giving out would manifest itself in organic disease, provided the person is not carried away by some acute affection. Is there any relation between the ~~difference in~~ tendency to different diseases in early, and in later life, and the different processes of the great chain of nutrition. It seems to me, that the acute, functional, or non-organic diseases of early life are due to ~~the~~ changes in the primary processes of nutrition, the constructive processes, or those by which the organs are built up. While the organic diseases of later life ^{that is} depend upon changes in the ulterior or destructive processes, those by which the waste material of ~~these~~ organs are removed. Now, if not all organic diseases predispose to acute diseases - the patient dies not from the organic disease, but from some supervening ~~acute~~ acute affection either of the diseased organ or some other organ. The powers of ~~enduring disease~~ life are much reduced by any organic disease, and the chances of recovery from any acute affection is much lessened.

We will now consider those symptoms which I called, in my first lecture, secondary, or more arising from the manner in which the local ~~aff~~ disease affects the system at large. These secondary changes may arise in several ways. 1. Changes in the state of the blood. Any alteration of the blood, finding its way to all parts of the body, must affect the whole system. ~~Therefore~~ results are often produced in this way, when the changes in the blood are so minute, as not to be appreciable by any chemical process. Or they

may be well marked, as is the case ⁱⁿ ~~when there is~~ suppression of urine, when the blood is loaded with urea. 2. The action of the blood vessels, if much changed by the local disease, ^{may} give rise to symptoms in various parts of the system. In inflammation, the general increased action of the vessels, gives rise to fulness, congestion, and often to new inflammations. 3. Secondary symptoms are caused (and it is ~~the most influential cause~~) by the direct or ~~indirect~~ nervous influence of one organ on another. Any affection of the brain affects the respiration and circulation. 4. Irritating secretions in a part of any system of organs, may by coming in contact with some other part of that system give rise to great irritation. Thus the altered secretions of the upper portion of the intestinal canal, ^{cause} ~~excite~~ by their contact with the lower portions of the canal, great disturbance in that part. Of the same nature also, are many of the affections of the larynx and fauces in phthisis. The ~~undue~~ disordered secretions of the lungs coming in contact with those parts, give rise often to serious irritation. But of these causes, there is no one which produces many of the vast number of constitutional symptoms. What is called sympathy explains many. In health there is a certain consent of parts existing between different organs. While ^{the} health is perfect, this consent is not perceived, but when the function of any organ is disturbed, all the other organs, to a greater or less degree, participate in the disturbance. Any disorder of the stomach produces a general and marked disturbance of the whole system; and so of the uterus. ~~These two organs;~~ The sympathies of these two organs ~~with~~ the rest of the system are very distinct. There ~~exists~~ seems to exist however, between the latter organ and the mammae a closer sympathy than is elsewhere found. This sympathy is often indirect, there being several links between the local affection and the principal effects of this affection. In nothing for instance, the irritation

caused by the tooth pressing on the gum, gives rise to disturbance of the
 intestinal canal, the food increases this disturbance, which acts on
 the brain, and the brain finally, reacting on the voluntary muscles,
 causes convulsions, the final and principal effect of morbid dentition.
 There is a great difference in different constitutions, as to the readiness
 with which the system at large is influenced by the local diseases, and
 as to the readiness with which particular functions are influenced. Take
 the case of acute inflammation. In one person, the constitutional symptoms
 will be very marked, in another, with perhaps, a more severe local affection,
 the system will be ^{but} slightly affected. In one person, the pulse will not be
 affected, though the constitutional symptoms ^{may} ~~will~~ in other respects, be well
 marked - in another the digestive function will go on as usual. Thus you
 see how many considerations arise in the course of any disease. At first
 we see the symptoms of the local disease clearly perhaps, but soon there
 arises a mass of secondary symptoms which shroud, envelop, or entirely
 mask the original affection. In inflammation, the secondary symptoms
 are most distinct, and generally follow a marked febrile course.
 There are ~~many~~ important differences, which are reducible to two con-
 ditions, which we will call, for the sake of distinction, active and passive.
 In the books they are also called, sthenic and asthenic, synchoid and
 apyroid. The one indicates strength, and power of endurance, the other
 the want of it. The commencing symptoms of these two conditions are much
 the same. They differ not so much in the presence or absence of any one
 symptom, but in their degree, intensity, and the mode in which they are as-
 sociated. An inflammatory affection begins with a sense of languor, lassitude,
 wandering pains, slight headache, chills. This being the stage of depression
 then comes the reaction, indicated by heat of surface, increased headache
 coated tongue, loss of appetite, cessation of the digestive functions constipation

affection of the pulse, of the respiration, of the nervous system indicated
 by restlessness and restlessness in the early, and more or less
 abatement of mind in the later stages of the disease. The constitutional
 symptoms generally correspond in their severity with the local disease.
 Even early in the disease, the distinction between the active and passive
 forms may be made out. In the first, the chills are marked, often ac-
 cording to a distinct rigor and the reaction comes on immediately.
 In the second the chills are more frequent and less distinct, and
 the stage of depression is longer. The headache in the active, is more
 severe, being throbbing and beating in its character, as the disease pro-
 gresses, the distinction becomes much clearer. In the active form, the
 pulse is full and large, ranging from 96 to 108, the respiration
 is full and deep, though hurried. The skin is full, red, hot, and
 dry or covered with a ~~hot~~ sweat occasionally. The countenance is full,
 and the eye dull, heavy and ~~congested~~, injected with blood. There
 is ~~loss~~ of appetite and of the digestive function - in the active form
 it is mere loss of ^{the} digestive power. In the passive form - the pulse is
 less full and strong, and ranges in frequency from 108 to 130 or 140.
 The respiration is hurried, ^{and} ~~congested~~ with a sense of sucking. The skin
 is imperfectly filled with blood and has a shrunken collapsed appearance.
 The heat is deficient, especially in the extremities. The palms of the hands
 often being hot, while the backs are cold moist. The countenance is
 shrunken, and the flush of a deeper color, almost sublivial. There is
 a sunken areola around the eye, which is also dull, heavy and con-
 gested, but the ^{areolar} congestion presents ~~no~~ appearance. There is also loss
 of appetite and of the digestive function, but in addition there is
 also generally nausea and vomiting.

Lecture X - Constitutional symptoms -

In the active form of inflammation, the ^{tongue} ~~mouth~~ is covered with a thick white coat, red at its edges - usually deficient in moisture, sometimes quite dry - protruded firmly. In the passive form, there is ~~a~~ coat is not so extensive, and the tongue is protruded less firmly. The color of the coat is dusky, or sub-livid, and it is thin shiny, and dirty. The breath is offensive, and there is a greater collection of sordes about the teeth. In the later stages the tongue becomes cracked and tremulous. In the active form the urine is high colored, scanty, with a whitish or luteous sediment. In the passive form the color is darker, and the urine has an offensive odor. In the active form there is confusion of the mental faculties and delirium. In the passive, the mind is not affected so early, and the delirium is of a low muttering kind, less violent, less connected with surrounding objects than in the active form. In bad cases there is subultus tendinum in the ~~late~~ passive form. In the ~~active~~ ^{active} form the muscular strength is pretty good, in the passive form, there is an earlier failure of strength, continuing to increase, and if the disease terminates favorably, the patient recovers his strength much more slowly than in the active form. The active form generally requires depleting remedies, the passive form cordials. The tendency to one or the other of these forms depends some what upon the previous health of the individual, but it is influenced somewhat by the organ affected. Thus pneumonia tends to take on the passive, pleurisy the active form. Both these sets of symptoms yield with the inflammation. It often happens, that though the inflam-

Mucous ~~prop.~~ action has ceased, the parts do not at once return to
 their natural state. The system therefore, cannot regain its former
 tone. It is to be kept in mind, that in diseases of considerable
 severity, that upon the cessation of the morbid action, there is a
 period of calm and that sooner or later a new train of symptoms
 arise, which will cause great anxiety on the part of the friends
 and the physician unless he understands their origin. This ex-
 plains the protracted convalescences, the relapses so called, the im-
 perfect recoveries. The ~~primary~~ symptoms have all subsided the
 patient is rapidly recovering. Soon comes a pause. The patient no
 longer continues to improve, then he begins to lose ground, and a
 new train of symptoms follow, more or less developed, more or less
 severe. The tongue has a white coat, usually thin, lying upon ~~the~~ and
 its substance is soft and flabby. The digestive organs are nevertheless
 affected, the urine is less in quantity, but has not the high color it
 before had, and deposits a branny sediment. The sleep is generally
 disturbed, and the patient is irritable and nervous. The pulse is soft
 and full, frequent. The hectic fever, accompanying those diseases
 attended with extensive suppuration, comes on with slight chills,
 followed by heat, and ~~more~~ copious and exhausting perspiration.
 The pulse is rapid, usually small and wiry. The skin is hot,
 dry, ~~but~~ sometimes becomes saturated with the sweat, sodden.
 The face is flushed, the tongue varies very much, sometimes covered
 with aphthous crusts. The appetite and digestion are ^{generally} ~~often~~ very good
 though sometimes the opposite condition exists. The evacuation is
 very rapid.

Lecture XI - Constitutional symptoms - Therapeutical considerations -

Perhaps the effects of no disease are confined wholly to the organ in which it had its seat. The constitutional effects of the other elementary forms of disease are less distinct than those of inflammation. Those following irritation resemble those of inflammation more than any other. They are generally sudden in their onset, affect the system more completely, and as suddenly disappear. They are very capricious not at all proportional to the irritation from which they are the effects. A very slight irritation will often be attended with very great constitutional excitement, and vice versa. The irritation of teething, often gives rise to intestinal disturbance and convulsions. The instances of this inequality between the cause and effect, are numerous. Simple irritation, without any inflammatory action has produced tetanus and death. The effects upon the system of the other elementary forms are not so marked, yet they exist to a greater or less degree. Long continued spasms will give rise to febrile excitement.

~~The~~ Chronic diseases, of a destructive nature, the constitutional sympathies as is seen in hectic. When the disease has not reached its destructive stage, the effects may be very obscure. Emaciation, a sense of weakness, and a pale lemon color of the skin, especially in males and old persons, if no other cause for them exists, are strongly indicative of insidious and probably fatal disease.

Therapeutical considerations. In studying the effects of remedies, we should fix our attention upon the following points, and keep them constantly before us. First we must have a clear idea of the nature of the disease, and as far as possible of its extent; Secondly

we must observe the state of the system in which the disease has arisen, inquiring into the peculiar tendencies to disease which the patient may have, and as to the existence of any organic disease. Thirdly we are to notice how much the constitution of the patient is influenced by the disease - fourthly we are to consider whether the disease is self limited - we must separate the effects of remedies from the effects of the sanative tendency of nature, the system which manifests itself in every disease, to a greater or less extent. It has often happened that ^{the effects of} these two agents have been confounded, and that has been attributed to the effects of the treatment pursued, which really was an effort of nature. Delirium tremens is an instance. The natural termination of this disease is in sleep, and narcotics ~~and~~ were supposed to bring about this effect: But it was found, that those cases ~~in~~ which were left to themselves, terminated as soon, and as successfully, as those in which opium and other remedies were administered. Be careful not to confound the symptoms resulting from remedies, with those dependent on the disease. We are to consider what are the effects of the remedies we are to use, on the healthy, and on the diseased state - and how our patient is influenced by particular remedies. Thus some persons cannot take opium - others are unfavorably affected by antimony &c. To these points we must add a knowledge of the composition of the remedies we are to employ. It is important next to determine the state in which we find the patient. In acute diseases we distinguish four pretty distinct stages. The first is the forming stage, very much the same in all diseases, because the constitutional symptoms are the prominent ones. We may be able to say in this stage that the patient will have a fever, but we cannot tell what kind of fever.

Its duration is very variable, and rarely death occurs in this stage.

In the second stage the disease is fully formed and its diagnostic symptoms appear. The ^{affected} organs and the whole system are fully under the influence of the disease. In this stage patients very often die.

In the third stage, there is a sort of subsidence, or collapse. The symptoms are all less intensity and the prominent suffering ceases. ~~This~~ This stage is the time at which suppuration or effusion take place. Patients often die in this stage. The fourth, is the stage of convalescence. The local affection has ceased, it is no longer progressive. Although it seems a contradiction in terms, yet a patient may die in this stage, as in typhoid fever from perforation.

The best example of these stages is found in ~~typhoid fever~~, acute inflammatory affections. The stage in which we find our patient has a close relation with the proper treatment, and with its probable success. In the first stage we can make the most important impression on the disease. The second stage is also, ^{much} under the influence of remedies, but not so much so as the first. In both these stages ~~our~~ our object is to mitigate or arrest the disease. In the third, we have no such object in view. The disease ~~has~~ cannot be arrested - we are called upon to support the part and the system, to enable it to undergo the necessary changes.

Having attended to all these preliminary points, the question arises, what is to be done. The first inquiry is, does the cause which has produced the disease still continue to operate. In acute diseases, it generally does not. In chronic diseases, the opposite is the case. To a certain extent, the cause may still continue to operate in acute diseases however as when a person lives in a miasmatic atmosphere, which has caused his disease. But little effect is produced upon.

the disease by the removal of these causes - (~~for the time being~~). Recovery will be hastened by this course. Exposure to cold, contagion &c. generally operate at once, and the patient is removed from their influence. They have exerted such an influence on the system, that the disease will arise and go through its course, independently of their ~~real~~ ^{continued} presence. A cold climate, bad living, bad clothing, excesses, &c. all tend to produce chronic diseases. Hence in these diseases, the treatment resolves itself very much into the removal of these causes. We are then to consider whether there is any remedy which exerts a specific effect on the disease in question. Thus quinine and arsenic exert a specific influence on fever and ague, and on most distinctly intermittent affections. Mercury has a specific effect on ^{secondary} syphilis, colicium on gout and rheumatism, opium, ether, chloroform &c. on spasmodic affections. I do not mean that this curative influence is uniform and infallible, but that in some cases, or in the majority of cases, they have a directly curative effect.

Lecture XII - Therapeutics - Diseases of Brain & Nervous System.

If these two engines do not aid us, we must next consider if we can in any way alleviate the disease by medicines, which are not directly, but indirectly curative. (operative Dr. W. calls them) These remedies act through some organ on which they have a specific effect, on the diseased organ. Quinine has a direct tendency to remove the morbid condition upon which fever and ague depends. Antimony, has a direct tendency to produce certain effects on the Liver and stomach, and may act through these organs to alleviate or arrest the disease. If we find we can do nothing in this way,

we must next do what we can to promote the curative tendency of nature. In many diseases some obstacle to this effort, ~~conduces~~ ^{contributes} to the part of the physician to remove this impediment if possible. The nature and degree of the disease is often an obstacle, and one which often cannot be removed. The constitution of the patient - the state of the mind - One of the most common obstacles is the external circumstances. The physician should see to it, that his patient breathes a good air, that he has sufficient light, warmth - cleanliness. He should look after and regulate his diet. A thousand little things can be done, which in the aggregate exert a very considerable influence on the disease. He should correct any functional disturbance which should exist, as of the digestive organs. The disease often produces effects which interfere with the progress of its recovery. These symptoms we should alleviate. The presence of the pleuritic effusion interferes with, or prevents entirely the restorative process. If we puncture the chest and remove this effusion we remove the impediment to the action of this curative effort of the system. The stomach may contain an unusual amount of acid, which may irritate the parts below. By neutralizing this acid, we remove the irritation. We should quiet pain, and the motion of inflamed parts. Diminishing the force of the circulation by bleeding, digitalis antimonial &c. removes one of the obstacles to recovery. If all these efforts are of no avail, and the disease is inevitably fatal, we can do much to alleviate suffering, which is a most important part of the duty of the physician. There is great difficulty in judging as to the curative effects of drugs. The difference between the experiments we perform for every treatment is an experiment as it were, contrasts very strongly with other scientific experiments. The chemist for instance operates with agents, the conditions of which are fixed and well known.

what he once determines, is always determined. Not so with the physician. The conditions of the subject upon which he operates are very different. No two Constitutions are exactly alike, nor is the condition of a patient one day, identical with his condition on another. What will purge one man, may vomit another. and a man today, may be ~~purged~~ ^{vomited} by a remedy, which tomorrow will be borne without any such effect.

We now come to the consideration of diseases of the Brain and Nervous system. The diagnosis of cerebral affections is often attended with great difficulty. In no ^{class of} diseases, is the distinction between primary and secondary symptoms so important to be made.

The principal primary symptoms of disease of the brain are of sensations - either distinct as pain, oppression, or indistinct as the sensation of boiling, of a turning over of the brain &c. &c. affections of the senses, which are either too acute or too dull - contraction or dilatation of the pupils strabismus &c. Deviations in the voluntary muscles, as convulsions, paralysis. off disturbance of the proper function of the brain, affection of the pulse, the respiration, the functions of the Rectum, the liver, the bladder, &c. These are diagnostic symptoms. Any one of them taken singly has little value, but any considerable combination of them, are strongly indicative of cerebral disease. Affections of the brain are often latent, and insidious. We often suspect disease of this organ when it does not exist, and it often exists when we do not suspect it. The brain is very closely connected with all the organs, and on the other hand, the most remote organs are under its influence. And first of inflammation of the textures within the cranium, I state it thus broadly, because I do not believe that we can distinguish, in the majority of cases, inflammation of the substance of the brain, from inflammation of its ^{membranes} ~~textures~~.

Indeed, we can hardly distinguish inflammation of the contents of the cranial cavity from other diseases of the same tissues I wish to describe the disease to you as you will meet with it in actual practice. As in other inflammatory diseases, we observe in different cases, and at different periods of the same case, two general distinctions, the active and passive as I have before called them. In the one, we have excitement, manifested by furious delirium &c, and in the other, the opposite state, manifested by depression, low delirium and coma. As a general rule, we may suppose that effusion has not taken place in those cases accompanied with excitement; and that the disease has arrived at this stage in those cases which take on the passive form. This is not uniform however. The early diagnostic symptoms of inflammation of the brain are - more or less pain in the head, generally about the forehead, sometimes over the occiput, extending a short distance along the vertebral column. Watchfulness, and loss of sleep - pain in various parts of the body, numbness in the limbs, tremors, delirium, contracted pupil, later in the disease, we notice a dulness of the faculties if the patient retain them, or a dull delirium, if that symptom be present. Paralysis of one side of the body, or of one of the limbs, more or less complete. Convulsions, spasms - followed by a stiffness and rigidity, coma, dilated pupil - imperfect speech, either in articulating or as is often the case of using words. The ideas are correct; but the words used to express them are wrong. If the paralysis, the spasm, the convulsions affect one side of the body only, if one pupil is dilated, the probability of inflammation is much increased. Sympathetic disturbance of the brain is general, usually, in its effects. If all these symptoms are present, the diagnosis is almost certain. The constitution sympathizes to a greater or less extent, giving rise to those general

distinctions called active and passive. The respiration and pulse are sometimes not more affected than in any other acute disease. Generally, the respiration is slow, irregular and imperfect. The pulse is intermittent, irregular, sometimes slow. Often there is nausea and vomiting, the urine is scanty and high colored. The bladder is often affected, there being either retention from spasm of the sphincter, or the opposite condition. We may distinguish three forms of inflammation of the brain. In the first, the symptoms are urgent. There is great constitutional disturbance, passing in a few days into depression or collapse. In the second, the affection of the mind is not so violent, the symptoms are not particularly severe, and the case terminates in coma. In the third class, the prominent symptoms at the outset, are purely gastric. There is obstinate nausea and vomiting, with dizziness and a tendency to syncope on the least effort. This continues for a few days, when suddenly coma comes on, soon followed by death. The prognosis in all cases, is grave. When recovery from a severe ~~dense~~ form of the disease takes place, there is often permanent loss of some of the mental faculties, especially of memory. The stage of subsidence, which I have described in a former lecture in speaking of the stages of acute diseases, is often very marked. The symptoms suddenly abate, and the mind often becomes clear and active. ~~and the mind is clear~~ When however, there is not a distinct abatement of the disease, with sleep - this appearance of improvement proves delusive. The morbid appearances are those of inflammation. Treatment. In the first active form, the first indication is general blood letting, the amount varying with the individual case. Leeches, should be freely applied to the temples and forehead. During the early stages, cold should be constantly applied to the

head. At the same time warm and stimulating applications should be made to the extremities. Free and continued purging, should be employed. Calomel followed by saline cathartics should be given. If the constipation is obstinate, the more powerful purgatives should be administered.

Lecture XIII - Inflammation of Brain - Delirium Tremens.

In the subsidence of the acute stage, we can only endeavor to palliate some of the symptoms. Of these the watchfulness is one of the most urgent. We may attempt to remove this by full doses of opium. There is a prejudice against the use of this drug in cerebral affections, which I think is unfounded. As these affections generally terminate in coma, and as the effects of opium are to bring about a state resembling it, the drug has been thought to hasten or to bring on, the fatal termination. We should be cautious therefore in its use. We may also try belladonna, chamomile, valerian &c. A mixture of tincture of hops and Chloroform often has a very marked effect. Delirium is a symptom ~~at~~ which we can exert little influence over. Opiates are inadmissible in delirium of a furious kind, but when the delirium is low and muttering, they may sometimes produce a beneficial effect. Here we may try musk, valerian, Chloroform &c. Chloroform carried to a degree of anaesthesia, has often a very marked effect in controlling convulsions - (the convulsions arising in typhoid fever, I have employed this remedy with the happiest results.) The diet, and the condition of the digestive organs should be very carefully attended to. Mild cases of this disease often recover, but our remarks apply chiefly to the severe forms, which rarely terminate favorably. If convalescence

As to the place, we must carefully regulate the condition of the digestive organs. If there should be any lingering signs of cerebral disease, mercurials should be resorted to. The best form is the oxy-muriate given in small doses. Tubercular Meningitis. Of the pathological condition, I have only to say that it is an inflammation of the cranial contents, with the development of tubercles in the membranes, and in the brain - generally connected with tubercular disease of the lungs, and in many cases, tubercles are found in the peritoneum. The diagnostic symptoms are not very different from those already detailed. Its early symptoms closely resemble typhoid fever for which it is often mistaken, and it is not uncommon for the true nature of the disease to remain unsuspected, until it is revealed by dissection - (a case of this affection under Dr. H. J. Bowditch in the Hospital, ran its whole course, under the name of Typhoid, this winter). The principal diagnostic points are the previous history. It will generally be found that the patient has been unwell for some time previous - that there is considerable emaciation - and that he has had some other cerebral symptoms besides ^{a violent} headache for several weeks, such as dizziness - difficulty of speech, some dulness of the faculties. This is not uniform however. The cerebral symptoms are more striking and distinct, appearing earlier than in typhoid fever. The character of the delirium is different. The respiration and pulse are peculiar in their character, the first being slow, irregular and imperfect; the latter often very slow and irregular. The characteristic symptoms of typhoid are absent: as epistaxis, rose spots, typhoid matter. The treatment has nothing peculiar, for the disease though less violent in its manifestation than inflammation is more fatal - I believe universally fatal.

We occasionally meet with cerebral inflammation arising from
 an old ulceration of the ear. The patient has had a discharge of pus
 from the ear perhaps for years. It gradually grows offensive. There
 is more or less pain, till at last ~~rather~~ suddenly cerebral symptoms
 develop themselves in the usual manner and ~~then~~ terminate fatally.
 This arises from the ulceration working its way through the bones of the
 auditory canal into the cavity of the cranium. Cerebral symptoms
 may follow blows upon the skull, either remotely, or directly.
 These cases are more recoverable than those of inflammation
 from any other cause. I have seen two remarkable cases of recovery
 from external injury. One was that of a boy who was struck on the
 head with a brick. The symptoms were as intense in this case as I
 have ever seen them. The patient was accidentally salivated, and
 recovered. He lost his hearing entirely, however, and soon lost the
 power of speech. The other case was that of a woman 60 years of age,
 who was salivated, and recovered. In this case too, the symptoms
 were very severe. Affections of the brain are so often insidious, that
 it is well to glance at those diseases which may simulate them.
 Hysteria is the disease which ^{most nearly} resembles cerebral disease ~~in its~~.
 When one is familiar with the hysterical physiognomy, he can
 generally make a correct diagnosis. ~~But~~ In hysteria, the constitution
 of the patient will often aid us. There is also an absence of the most
 marked signs of ~~the~~ cerebral disease, especially those which apper-
 tain to one side of the body, as opposed to the other - (vide Lecture XII).
 Then we have the presence of certain hysterical symptoms, as a
 general tremulousness of the limbs, a ~~trembling~~ of the eyelids,
 with shedding of tears, a copious flow of limpid urine - (I have
 known one case of true cerebral inflammation in which there was the

same condition of the urine.) There there is a capriciousness in the symptoms, being severe one hour or one day, and milder the next. The earlier stages of inflammation of the brain may be simulated by inflammation of the mucous membrane of the frontal sinus. There will be severe headache, great constitutional disturbance, and sometimes pretty high delirium - but the way in which these symptoms yield to treatment, will disclose the true nature of the disease. Typhoid fever often simulates cerebral inflammation. [The cerebral symptoms in typhoid fever are in the great majority of cases sympathetic. The delirium is of a different character from that of inflamm. of the brain. The previous history differs - in short there is little difficulty on this point. Dr. Wyman.] Delirium Tremens - Is not, as was formerly believed, an inflammatory disease. It is peculiar to hard drinkers. An imitation of this affection is said to arise in opium eaters, but from the accounts I have seen, I am inclined to think it is only an imitation. Its characteristic symptoms are delirium of a peculiar kind, tremors, and persistent wakefulness. From this last symptom, which is ~~very constant~~ always present it has been called delirium vigilans. The peculiarity of the delirium is that the patient mistakes his ideas for perceptions. The perceptive organs are capable of being affected from within and from without. In dreaming, the influence comes wholly from within - in delirium tremens, the two are ^{so} mingled that the patient does not discriminate the objects really present, and those which are generated in his own mind are to him equally real. The patient is constantly active, and starting - hearing strange sounds, and seeing strange things.

We often find him, imagining himself working at his trade - sometimes
 pursued by wild beasts - or by thieves - annoyed by a rat or a mouse.
 He will sometimes take the bowl from which he is to drink and en-
 deavour to free the contents from the insects which he imagines exist
 there. The general character of his ravings, is that of timidity. He
 is more completely absorbed in all these occupations than in real life.
 There is a general tremor, especially of the hands - sometimes of the
 diaphragm ~~and~~ affecting the respiration. Sleep is for the most part
 entirely absent. As the paroxysm advances, there is the appearance
 of extreme exhaustion. The skin is bathed with sweat. The pulse quick
 and feeble. Sometimes the entrance of the physician will produce a
 calm, but it is only temporary. You can sometimes, by calling his attention
 closely to some point, as the furniture of the room, &c. convince him that
 he is at home, (for he generally imagines himself in some strange place)
 and he will wonder how he got back so quickly, but in a few moments
 he will be as far away as ever. Some times, generally indeed, there
 are slight remissions in the morning, and rarely he will become calmer
 and get a little sleep. The occurrence of this paroxysm is generally
 preceded by two or three nights of broken sleep, with troubled dreams,
 generally of the same nature as his future ravings. After ^{one of} these nights, ~~he~~
~~more~~ disturbed ~~than~~ before, he will become wild ~~in~~ the morning, continue
 so during the day, and at night become quite violent. The second morning
 he will have some slight remission, his delirium becoming more furious
 as the day advances, being much more violent the second night than
 the first. The third morning the remission will be more distinct, and
 the delirium will be less violent through the day. The paroxysm terminates
 in sleep, generally in from 60 to 72 hours. Sometimes it continues 96
 hours. The sleep is at first troubled, but soon becomes sound, con-

travelling through the greater part of the 24 hours. He wakes rational, the past being as a troubled dream. Rarely, he thinks that these subjects of his ravings, were real events. This is the course of the disease when it terminates favorably. He may die comatose - or in convulsions, or suddenly, without these symptoms, apparently from exhaustion. A paroxysm may occur directly from a long continued debauch, the patient being in his usual health before the attack - ~~or it may be~~ 2nd we have the pure cases of delirium tremens, in which there is at first some disturbance of the system - chills, headache, febrile excitement, nausea and vomiting, but none of these severe. The pulse is generally quicker than the amount of constitutional disturbance would seem to warrant. With these, come the sleepless nights - then the paroxysm as described. Recovery is ordinarily perfect in these cases.

Thirdly, it may arise in the course of any acute disease - either in the acute stage, or in that of convalescence. Whenever it occurs, the patient becomes suddenly relieved of his prominent symptoms.

Lecture XIV. Delirium Tremens - Hydrocephalus

When the attack of delirium tremens comes on during the course of an acute disease, the patient seems much relieved. We find him, perhaps, up, and dressed, but his manner is not natural. It is hard to describe it, but we cannot fail to observe the change. His appetite is often voracious. This continues through the day, and but he passes a bad night. This state of things continues a day or two, when the paroxysm comes on as before described, meanwhile the original disease runs its usual course. When the attack comes on in the early stage of an acute disease, it adds to the danger, by concealing the symptoms.

of the primary disease. It is in these complicated cases, that death is most common. Under other circumstances it is extremely rare. Fourthly - Delirium Tremens may arise in the course of a chronic affection when it does not take the form of a paroxysm, but appears as an occasional delirium, ^{having} of the peculiar ~~kind~~ - features as has been described. The proximate causes of this disease we cannot point out. There are no constant pathological appearances. It probably consists in a state of irritation of the brain. This is rendered more probable, by the fact that the recovery is so speedy and so complete. The diagnosis, so far as the paroxysm is concerned is very easy. The main point is to determine whether it is simple or complicated. Various opinions have prevailed as to the treatment of this disease. It was only at the commencement of the present century that it was recognized as a distinct disease. Previous to that time, it was treated as simple inflammation, the results of which treatment were very fatal. In 1805 Dr. Sutton wrote an essay on the subject in which he proposed a new mode of treatment. He had observed that the natural termination of the paroxysm was in sleep, and inferred that whatever would bring about this result, would shorten the paroxysm. He therefore advised the use of opiates in large doses. This soon became the universal practice, but still the disease was very fatal. Physicians again became dissatisfied, and Dr. Chapman of Philadelphia proposed the ^{free} administration of emetics. Still the opiate practice prevailed, and very large doses of the drug were given. I was somewhat startled by some deaths which occurred in my practice, in which cases I thought I could trace the fatal result to the opium. I gave one man a full dose of opium, and left him. In the night I was called to him, and

found him dying, comatose. In a case of ~~tertian~~ cholera, in which delirium tremens supervened, I gave 72 grs. of solid opium in the 24 hours, and the patient died. I then inferred that it was best to let the patients alone. I then carefully examined all the recorded cases, and found that the disease came to its natural termination at about the same time. Inferring from this that the treatment had no beneficial effect, I merely administered some evacuant remedies at the outset, and "let nature work". Of those cases treated by opiates one half died, of those in which no expectant treatment was pursued, only one in twenty nine died, and ~~in those~~ were complicated with some acute disease. Whether this treatment will hold at the present day, I cannot say, though I have seen or heard nothing to contradict it. Sleep is generally a favorable termination, though I have seen three cases in which death occurred after the sleep. The watchfulness is generally complete. Some times, generally in the second or third attack, there is more or less sleep, during the paroxysm. Under the opiates practice, convulsions were regarded as a fatal symptom: now it is not so fatal. An opinion long held was that general bleeding had a bad effect. I found this to be incorrect. Of 13 cases in which blood letting was employed, only 2 died, and these were complicated. This not to be understood from this that bleeding is to be employed in all cases, where the paroxysm is preceded by high febrile action, and convulsions, and where the patient is not much debilitated by his excesses, and good bleeding is beneficial. Under ordinary circumstances, the use of opiates

is inadmissible I think that opium has a tendency to bring on this affection in the diseases of drunkards, especially in the diseases of the bowels as before said, where there is great constitutional excitement, or convulsions, blood letting is to be employed, unless contraindicated. In the acute inflammations of drunkards, bleeding is not well borne. in the irritative affections, it is well borne, as a general rule. Leeches and cold lotions to the head are often of advantage. The only case in which I ever saw the paroxysm arrested, was by the free application of leeches to the head. In the early stage, it is best to vomit and purge the patient moderately. The best emetic for drunkards, under any circumstances is the sulphate of zinc. Rhubarb, is the best purgative. We now only need to watch the patient and give him proper nourishment. If he have a desire for food, it is generally well to give him what he wants. usually there is complete loss of appetite. During the paroxysm we must give some placebo, just to keep the nurses at work. Sp. Ether. Nit. Acet. Ammoniac are innocent remedies. Ether and Chloroform have been proposed. I do not know enough of their action in this disease to say anything about them, as I have seen little of this affection, since the discovery of the application of these agents. They seem to promise more than any previously proposed remedy, yet I doubt if anything can arrest the paroxysm.

Acute Hydrocephalus. - As this disease is ~~peculiar~~ ^{peculiar} to children, it is a very important one to the young physician, whose practice is almost confined ^{patients of} to this period of life. This name includes several conditions, only similar in their termination, which is the effusion of serum within the cranium. All cases do not terminate thus. the patient dying before this stage has been reached.

It is essentially an inflammation of the brain, which is in the large majority of cases connected with tubercles either in the brain or its membranes. It occurs in most cases, in scrofulous children, nervous, badly nourished, and with large heads. These remarks are not uniformly correct, as it may come on under opposite conditions. The causes of this disease may be classified as follows.

- 1- This form attacks children from 5 to 7, even as late as 11 or 12 years of age. In these there has been some previous ill health, emaciation, some derangement of the digestive organs, nausea without any definite cause - paleness, listlessness - indisposition to exertion - more or less headache, sometimes dizziness. These usually precede the attack for some time. More distinct symptoms now show themselves - as irregular febrile symptoms, with severe headache, coming on in the afternoon, the child complaining of its head especially. The pulse is generally rapid, and often there is palpitation. This state of things may continue from a week to two or three months, when the attack commences with more constant and severe pain in the head, delirium, and the peculiar affection of the respiration and pulse, described under inflammation of the brain. There is nausea and vomiting, and obstinate constipation.
- 2- This form is peculiar to children under three or even two years of age. The attack is usually sudden, the child being ~~seized~~ often while playing about the room, with violent pain in the head, nausea, vomiting, high fever and delirium - often convulsions.
- 3- This form comes on in the course of or after other diseases especially bronchitis, pneumonia, cholera infantum. Its access is usually very insidious.
- 4- comes on after injuries. A blow on the head is often fol-

lowered by hydrocephalus - In whatever way the disease may
 come on, tubercles are found in the brain in by far the majority
 of cases. After the disease is fairly established, there is an essen-
 tial similarity in its course, whether be its mode of attack - We
 observe as in adults. The stages of excitement and depression,
 generally at different stages of the same case. In the stage of
 excitement. There is pain in the head, varying exceedingly in
 its seat, and severity - pains in the limbs - convulsions, sometimes
 general, oftener of one side. Sometimes of particular muscles -
 contracted pupils - strabismus. sometimes a fixed condition
 of the eye. The fever is considerable pulse quick, rapid and
 irregular. respiration irregular, imperfect, often thoracic - The
 urine is high colored, and in small quantity. There is nausea and
 vomiting, with gastric oppression. The condition and sensations
 of the patient, resembling very much those caused by tobacco
 or seasickness. The bowels are usually irregular - very rarely
 diarrhoea, very often an obstinate constipation. I have seen
 40 or 50 grains of jalap, preceded by calomel, and followed
 by oil, given to a child two years old without producing
 any evacuation. There is great irritability, if the patient retain
 his faculties. There is great watchfulness - or there may be a stupor
 state, ~~almost~~ resembling comas. The stage of depression begins
 when effusion takes place. The acute symptoms, especially
 the pain have subsided. The fever is less, though there are ex-
 acerbations. The pulse becomes slow, falling to 40. 50 - 60 - 50,
 or even, as I have once seen to 40. The respiration becomes slow
 and irregular - the nausea and vomiting cease. The child
 is sleepy and stupid - if awake - wandering - The pupils dilate -

Sometimes to such an extent as to obliterate the iris - convulsions - paralysis - Before death the pulse more rapid, running up very high. This ^{change is a} sign that death is approaching. The amount of fluid in the cranium varies with the stage of the disease at which the patient dies -

Lecture XV. Hydrocephalus -

The most characteristic symptoms of hydrocephalus are pain - the condition of the stomach & alimentary canal - the state of the voluntary muscles - the appearance of the eye. the pulse and the respiration. Of each of these it will be well to say a few words. Pain in the head, though not often absent, still is by no means a diagnostic symptom of value. It may arise from so many other causes that we cannot judge from this alone. Pain in other parts of the body, especially in the extremities is more characteristic. The pulse is in most cases rapid at the commencement of the disease. It may sometimes be slow, especially in those ~~sym~~ cases, where there has been previous ill health. During the progress of the disease, especially after effusion has taken place, the pulse becomes very slow, growing rapid again as death approaches. Through the whole of the disease it is more or less irregular - as much so, often, as in disease of the heart. This character of the pulse is a very important one. The respiration is peculiar, being irregular in many cases from the outset - as soon as the disease is fairly established it becomes somewhat thoracic. In the stage of depression it becomes slow and sighing. Late in the disease, it often only a series of deep drawn sighs. The gastric symptoms are often the first which attract our attention

Nausea and vomiting, with ~~that~~ ^{rather} gastric oppression, resembling the effects of tobacco or sea sickness, in children, should always lead us to suspect the brain. They usually are confined to the active, or stage of excitement in hydrocephalus. The state of the eye. Naturally, the pupil during sleep is contracted. The first effect of awaking, is to dilate the pupil. It dilates beyond its usual state, and then, becoming amenable to the stimulus of light, again contracts. In diseases of the brain, however, the pupil during sleep is generally dilated. In the early stage of hydrocephalus, there is often a fixed condition of the muscles of the eye - the child ^{apparently} staring intently at some object. Later in the disease, the pupil becomes dilated to a greater or less extent, and more or less insensible to light and in the last stages, the child is often ~~perfectly~~ blind. This loss of sight seems sometimes to depend on some ^{local} pressure on the optic nerve. In this case, the perceptive power still remaining the other senses, hearing touch &c. ~~are~~ ^{are} not disturbed. In other cases, the trouble seems to lie in the perceptive function. If I may so express myself, of the brain, and therefore the other senses, are impaired, to a greater or less extent. The blindness depending on the first cause, is permanent - while that due to the last condition, is changeable. The patient seeing, hearing at one part of the day, and becoming blind and deaf at another. I have spoken of the fixed condition of the muscles of the eye - often there is strabismus - and in many cases, the eyes are in constant motion. Condition of the voluntary muscles. Convulsions may occur at any period of the disease, though they most frequently appear in its later stages. They may be general, but are more commonly confined to one side of the body. In some cases they are confined to a single limb, or even to a set of ^{particular} muscles. Paralysis often follows convulsions, generally affecting the side which has been the seat of the latter affection. Sometimes paralysis occurs independently of convulsions. There is

in some cases, a tetanic spasm of the muscles of the neck and back, giving rise to that appearance called opisthotonos. With all the aid we can derive from the careful study and observation of these symptoms, the diagnosis of hydrocephalus, is often very doubtful. It simulates at some of its stages, very closely, some stages of other diseases, and ~~on this~~ it follows therefore, ^{that I am opposed} that a source of error, that of confounding other diseases with the one under consideration. ~~It will be well~~ therefore to point out briefly these diseases which may render our diagnosis doubtful or incorrect. Hydrocephalus resembles often, many of the fevers of children. This mistake is very often made, and it is a very difficult one to avoid. After a longer or shorter time, the characteristic symptoms of the cerebral affection manifest themselves. Hydrocephalus often closely simulates, at its commencement, ~~some of the~~ many derangements of the digestive organs, to which children are so liable. Often the first symptoms which attract our notice are gastric, and it is often very difficult to determine, whether the trouble be seated in the stomach, or whether these affections of these organs, is merely the manifestation of a fatal disease of the brain. Hydrocephalus may commence with all the symptoms of Bronchitis, and so deceive us as to the true nature of the disease. When in the acute diseases of children, the pulse becomes disproportionately slow, i.e. when it becomes much slower, than it ought to be, with the amount of local disease existing, more especially when it becomes slower than is natural in health, we have great reason to suspect cerebral disease. Hydrocephalus may commence with convulsions, a very common ^{among children} symptom, and ~~it is~~ means a very fatal one, (unless, of course, it depend on disease of the brain) Without careful observation, we cannot distinguish these con-

pulsions which arise from hydrocephalus, from those depending
 on other causes. Hydrocephalus, arising in the course of other
 acute diseases, as it not infrequently does, may be overlooked for
 a long time, or mistaken for something else. In the diseases of
 children generally, the condition of the brain should be carefully ob-
 served, and watched. As we are then, always fearing, always looking
 for the symptoms of this grave disease, it is very natural result of
 this anxiety, that we should be led to infer its existence where it does
 not exist. Let us look for a moment at this source of error. Many
 fevers may simulate hydrocephalus - we have headache, fever, convulsions
 and sometimes, though very rarely, a slow pulse and respiration.
 Typhoid fever often very closely resembles it, in fact the diagnosis,
 I think, is not infrequently impossible. But as the disease advances
 the distinctive marks of the disease present themselves. In fever, there
 is rarely, if ever, the slow sighing respiration, and the irregular pulse -
 The pupil is not dilated, or not to so great an extent. Then the symptoms
 of typhoid aid us, when they appear, as meteorism, epistaxis, rose
 spots &c. Gastric diseases ^{often} commencing with nausea vomiting, stoma-
 chical respiration &c. and in their latter stages, present many of the symptoms
 of hydrocephalus - especially a state of stupor, amounting almost to
 coma. But the pulse never, I believe, assumes the hydrocephalic char-
 acter. In the last stages of almost any acute disease of children which
 is proceeding to a fatal result, we have a state of stupor or coma, with
 spasmodic affections of the muscles - opisthotonos, with loss of vision
 and hearing - without great dilatation of the pupil - (depending therefor
 on a loss of the perceptive faculties) &c. The prognosis, ~~off~~ hydrocephalus,
 if the diagnosis is certain, is fatal. There may be a suspension
 of the disease. I remember one case, of a child, with marked symptoms

of hydrocephalus, who apparently recovered, but after six weeks had gone by, he was again taken sick, and soon died. when dissection disclosed the presence of tubercles and of ~~effusion~~.

Treatment. As the disease has been said to be certainly fatal, you may think that there can be little use in laying down any course of treatment. But it is best to treat all cases as though they were recoverable, you may always be wrong in your diagnosis, and you should give the patient the benefit of the doubt. The treatment must depend upon the case before you. General bleeding, in those cases, when the patient has been suddenly taken, having been previously in good health and where the symptoms are very severe at the outset, may be beneficial. in all other cases, it can only do harm, and should be carefully avoided. Local bleeding may be employed to combat particular symptoms, as severe pain - but is seldom called for. Cold applications are universally to be used. In some few cases, I have found the application of cold disagreeable and even painful. In these cases, warm applications have given relief. Emetics are very rarely if ever to be employed. Purgatives are more suitable, and in all cases the bowels should be evacuated if possible. Sometimes enormous doses are taken without producing their accustomed effect. Where this is the case, I doubt the propriety of this use. I should rather trust to the administration of purgative enemata as surer. If purgatives are given, they should be of as little irritating as possible. The use of these remedies is mainly confined to the ~~first~~ first days. After this, we must be guided by circumstances. I think there is often advantage derived from the use of calomel in small doses. The for-

mula I have found most beneficial is as follows-

R^x - Hydragryni Chloridi Mitis - gr. viij
 Iodini - gr. j
 Sacchari - gr. xij

M. et divide in chart. No viij

One to be taken every four or six hours.

Violent convulsive action must be treated by Dover's Powder must &c.

Lecture XVI. Hydrocephalus - Chronic. Convulsive diseases.

If the urine is much diminished, sometimes diuretics are of use - as Tinct. Digitalis. Cauterides. Squill &c. If there is much irritation especially if there be convulsions, the warm bath is often of great advantage. In the last stages of the disease, opiates and antispasmodics may be used, to remove distressing symptoms. An opiate will often quiet the patient, and if it does not relieve the real affection, by alleviating the apparent suffering of the patient, it serves to lessen the anxiety and sufferings of the friends. Bleedings of the head was formerly used in all stages of this disease. I cannot advise the use of this agent ~~with~~ ^{should be} young children. If there ~~was~~ ^{should be} any apparent improvement in the symptoms, blisters might be used - even continued vesication might be advantageous. We must be very cautious as to our treatment of those cases, which in their late stages simulate hydrocephalus. As before said, the last stages of exhausting diseases bear a very close resemblance to the disease under consideration, and the depleting, or the palliating treatment proper for the true affection of the brain, would in these, be attended with disastrous results. The only chance is ~~in~~ the active use of stimulants - ammonia in small doses - brandy pretty freely &c. We sometimes see chronic hydrocephalus originating *per se* - and sometimes following the acute form. The first is the more common, though both are rare. It consists in effusion.

without previous inflammatory symptoms. It may occur before birth. Children are born hydrocephalic. It is most common in ~~children~~ for the first two or three months after birth. It begins with slight symptoms, as restlessness and fever - perhaps a slight affection of the eyes - sometimes an obscure spasmodic action of the muscles, or rarely convulsions. Soon the cranium begins to enlarge, and this enlargement may go on for a long time. Cases are on record, in which the circumference of the head was two feet. I have seen it 21 or 22 inches. The patients do not become comatose. The brain is not compressed, because the bones of the cranium, not being consolidated, yield to the pressure of the effusion. The brain continues to perform its functions, though imperfectly, and life is not cut short, as it would be, by a much smaller effusion, where the cranium ~~was~~ incapable of distention. The effusion may go on for weeks or months, or years - a case is on record where it lasted thirty (30) years. These cases of chronic hydrocephalus are rare, and not much can be done for their relief after the disease is fully established. I have seen a case, where the patient recovered, after the head had become enlarged to the extent of two or three inches. A steady course of mercurials should be employed, giving small doses - in a child of two or three months old - $\frac{1}{4}$ of a grain of calomel once in 24 hours. Diuretics, bandaging - cupping, have all been recommended. The disease is not common enough to decide the merits of any of these means, and our treatment must be adapted to the individual case. In the course of a long practice, one meets with a good many anomalous cases of cerebral disease. I think I cannot ~~display~~ a few moments better, than by ~~presenting~~ a few such cases, which I have met with one most case of tumor of the cerebellum simulating to some extent hydrocephalus. The patient was a boy, 16 years of age - In April, he presented symptoms like those of approaching hydrocephalus. ~~His~~ pain in the

forehead, shooting around the orbits - febrile excitement coming on in the afternoon. There was no affection of the senses, or of the voluntary muscles. The respiration was slow, as was also the pulse - but it was easily accelerated. There was some nausea and vomiting, with very obstinate constipation. I would again mention, that obstinate costiveness, which cannot be referred to some obstacle in the alimentary canal, is a very suspicious symptom - as regards disease of the brain - From as active purging as could be effected there was some improvement, but of short duration - Mercurials seemed to exert no effect, at times he would appear better, but the improvement was not permanent. In the middle of August, apparently from some irregularity of diet, but really, I suppose from the progress of the disease he became suddenly worse, and died in the last of the same month with all the symptoms of cerebral disease - After death, three or four tumors, varying in size from a common walnut to an English walnut, and apparently of a serofulous nature, were found in the cerebellum, with some effusion into the ventricles - Persons die sometimes with symptoms of cerebral disease, arising from some disorder of the alimentary canal, characterized by long continued vomiting, of these cases I have seen four, all of which were connected with pregnancy. In these cases, the vomiting (which is so natural to that state) was of extraordinary frequency and duration, after producing great exhaustion, the vomiting suddenly ceased, and the patients seemed better, but in a day or two symptoms of cerebral disease appeared, and they died in a few days. One of these cases was connected with jaundice in the only one of these cases ^{in which} I was permitted to examine the brain, I found a moderate amount of effusion into the ventricles. I have seen one case of affection of the brain of a more permanent character, resulting from long continued vomiting. The patient was a man, of good health, but who was particularly liable to seasickness

He started on a voyage from Liverpool to this country, and as soon as the vessel put to sea, became very sea-sick. For some cause the vessel put back in a day or two, and as soon as they reached the shore, his sickness disappeared. I mention this to show that the vomiting was dependent on this cause, and not on any organic affection. They again put to sea, and had a passage of 44 days to Charleston S. C. For 40 days, he vomited incessantly, his stomach retaining no food. He was much exhausted, and it was thought he must die. He retained his mind perfectly, writing business and other letters, made his will, and prepared his affairs, for his death, which he supposed near at hand. But on the fortieth day the vomiting ceased, his appetite returned, his digestive organs ^{discharged their functions} ~~became~~ naturally. But his mind was gone. He was brought to this city, where I saw him. His digestive functions were in good condition. his senses retained, with an increased sensibility of the skin. His sight was perfect so far as the impressions on the optic nerve were concerned. but there was a sort of tremor of the muscles of the ball, so that the vision was imperfect. When he attempted to walk, he would say there was a high sea running, and would become dizzy. The ^{memory} ~~mind~~ was completely lost, as to any recent event. He could not remember from one day to another. so that I had to be introduced to him at every visit I made. Events which had taken place years before, he remembered as well as any man, after a time he was able to read, but did not remember what he had read from one day to another. one book was as good for him, as a library. He was perfectly aware of this condition of his mind, and talked about it freely. He lived for eight or nine years, but never regained his memory, nor could he walk without great difficulty. — We now come to the consideration of those diseases in which convulsions is the prominent symptom. These are called

The Convulsive diseases. The convulsions may be clonic - as in epilepsy, hysteria and chorea - or tonic - as in hydrophobia and tetanus - I shall speak first of the convulsions of children, as having an important bearing on the diagnosis of the disease we have just studied - viz (hydrocephalus) The large proportion of the convulsions of children are not dependent on an original, but on a sympathetic affection of the ~~brain~~ nervous centres. The younger the child is, the slighter ~~are~~ the causes which may produce convulsions, and the less is the probability of any disease of the brain, after five, the tendency to convulsions almost ceases, and their occurrence is a stronger symptom of cerebral disease. The attack is generally sudden, the child being seized while at play, or during sleep - Sometimes there are precursory symptoms, which do not point out the coming affection. There is heaviness, irritability, loss of appetite, indigestion, perhaps diarrhoea. Sometimes a sudden starting during sleep, with a violence like that caused by an electric shock. This is one of the most characteristic symptoms of approaching convulsions. The convulsions are usually clonic. The paroxysm usually commences in the eye, that being turned ^{up} towards the corner of the orbit - twitching of the lids - followed by twitching of the muscles of the face, neck, trunk and limbs of one or both sides. The pupil may be dilated or contracted, but is insensible to light. Soon after the commencement of the muscular action, there is loss of consciousness. The paroxysm varies much, as to its length and severity. Sometimes there is a single paroxysm - sometimes several. In some cases, the patient lies between the paroxysms, in a comfortable state - in other cases, he is perfectly unconscious, and lies in a state somewhat resembling comas. In others, the muscular action does not cease with the paroxysm, but continues to a greater or less degree. The more perfectly the patient recovers from an attack of convulsions, the less reason is there to fear the existence of disease of the brain. Occasionally we see what the nurses call "inward"

fits" and which expresses the affection very well. The brain and nervous system seem to be in the same state as in convulsions, without the convulsive action. Between the convulsions there may be paralysis of some of the muscles. Sometimes the convulsions affect the diaphragm and the muscles of the chest, and throat, and may interfere so much with respiration as to suffocate the patient. In most cases there is a difficulty of swallowing. The sphincters are generally relaxed. Recovery takes place in the very large majority of those over one and under five. It may take place as suddenly as the attack, but is generally gradual. We are often asked "is the child out of the fit?" and it is not always an easy matter to decide this question. We must carefully observe the pupil, especially whether it is sensible to light, by noticing if the patient can be roused, and if so, whether his mind seems natural. Death may occur from convulsions in several ways - sometimes from asphyxia in the way above mentioned - sometimes apparently from the shock on the nervous system - or more gradually, the patient falling into a comatose state with a high, full, labored respiration - sometimes they may pass into hydrocephalus - or they may be the precursors of an acute disease of which the patient may die; ~~the~~ ^{when} seeing the convulsion, the first question that arises is, what is the cause of the attack? On the solution of this question hang the proper ~~diagnosis~~ - prognosis and treatment of the affection. In infants, very slight causes often produce convulsions. Sometimes there is a family tendency to them. Very slight pressure on the cranium, as the bone being used for a handle, often is followed by convulsions. They frequently follow the asphyxia of new born children, especially I have reason to think, where artificial respiration is employed. Any irritation of the intestinal canal will often give rise to convulsions. There are almost constantly seen, in infants, a variety of irregular muscular

actions, arising from slight irritation of the primitive vial, which are only a less degree of convulsions. As the child grows older, convulsions become less frequent, more powerful causes being required for their production though sometimes these causes are comparatively trivial, as the irritation of teething. As a general rule, the more powerful the causes the more severe is the convulsion. In nervous children, a very slight cause may give rise to so severe a paroxysm as to threaten, and even to be followed by, death. Convulsions ^{often} arise at the commencement of many acute diseases of children. They seem to correspond to the chill which ushers in the acute diseases of adults.

Lecture XVII. Convulsions of Children - Epilepsy.

We often notice convulsions in the exanthematic diseases of children. When they occur at the eruptive stage, as they most frequently do, they indicate less danger than when they appear at any other time, in the course of the disease. The same holds true of the initiatory convulsions in acute diseases - They are of less importance than ~~when~~ they occur, after the disease is fully established.

Convulsions like chills, seem to attend any considerable effort of nature. ^{at} The eruptive stage of the ~~exanthematic~~ exanthematic diseases, nature makes an effort, as well as in the formative stage of other diseases. Convulsions also arise from other affections of the skin, especially from burns. There seems to be a very close connection between the skin and the nervous centres, for irritation of that part is very apt to be followed by convulsive actions. Convulsions also occur, in primary disease of the brain, in which case, they are of course more dangerous, or rather they indicate a fatal affection. The important point in the diagnosis is to determine whether any primary disease of the brain exists, and then to ascertain the particular local irritation which has given rise to them. At the commencement, it is

impossible to determine this with certainty. We have reason to believe that there is no cerebral disease, if the child is under a year old - if there has been no previous ill health - when vomiting gives relief - when the patient is restored to consciousness between the fits, and when there is no affection of the eye. On the other hand, if the child is over a year old, if there have been some previous cerebral symptoms, if vomiting does not give relief, if the child lies between the fits, in an unconscious, or comatose state between the fits, if there is any affection of the eye, if the respiration is heavy, and consists of long drawn sighs, if there is paralysis, especially hemiplegia, we have strong reason to suspect the existence of cerebral disease. Those symptoms affecting one limb, or one side of the body, leaving the other in a natural state, are more characteristic of primary cerebral disease, than those affecting both sides alike. And the reason I think it is this - If original disease exists, it generally affects only a small part, or only one half of the brain - therefore the unnatural nervous force is manifested, on the opposite side of the body. But imitation from disease elsewhere, affects the whole brain, therefore both sides of the body are affected. There are exceptions to this, as there are to every small concerning disease - We are often asked the question - does the occurrence of convulsions during childhood, render them liable to convulsions in after life. I think we may safely answer in the negative. I have seen but a single case, where convulsions in childhood, have been followed by epilepsy in after life. Other physicians, have seen such cases - but when we consider the frequency of convulsions, and how rare a disease, ^{comparatively} epilepsy is, and still more, that in most cases of epilepsy, we cannot find that the patient was subject to convulsions during childhood, I think these are to be regarded merely as coincidences.

The treatment of convulsions will depend somewhat on the estimate we form of each case. But it is important to arrest the convulsions

action. The remedies recommended for this purpose are. Bleeding, vomiting,
 purging. the warm bath. ether, chloroform, and the antispasmodics.
 General bleeding is rarely demanded. If the paroxysm come on in full
 health, if there is a full strong pulse, fever, and excitement, it may be
 used perhaps, with advantage. Local bleeding may very generally be
 used with advantage, provided the paroxysm is not accompanied by de-
 pression. But the most effective remedy, and the first one to be tried, is
 vomiting. In a very large proportion of cases it ^{arrests} ~~suspends~~, and often sus-
 pends entirely the convulsions; of the emetics, ipecac is undoubtedly
 the best. The sub. sulphate of mercury is ~~often~~ advantageously combined
 with ipecac, in children over a year old. Antimony is an unsuitable remedy.
 I think. It is less certain, and is very prostrating. Sulphate of zinc, and
 sulphate of copper are excellent remedies, and often succeed where others
 fail. The stomach is sometimes extremely insensible to the action of
 emetics. In this case, mechanical distention of the stomach by warm
 water, often causes it to act. Tickling of the fauces, is a more certain
 and simpler method however. The child should be put into a warm
 bath with a small quantity of mustard, as soon as possible. A
 thorough evacuation of the bowels should be obtained as soon as possible.
 While waiting for the action of the emetic, an active enema should be
 administered. Ether and chloroform, especially the latter have a good
 effect. They should be deferred till vomiting has been produced. If
 convulsive actions still continue, it is well to put the child moderately
 under the influence of chloroform. These means are to be used with
 an activity and urgency, proportionate to the severity of the case. After
 quelling the convulsion by these means, or after satisfying ourselves
 that they have done all they can do, we must now make our decision
 as to the nature of the case, viz whether true cerebral disease exist or not.

74.9 If we decide there is no disease of the brain, or no acute disease, it is not necessary to continue active treatment, giving only chloroform and the other antispasmodics. If there is cerebral, or other acute disease, we must adapt our treatment to these diseases.

Epilepsy or Falling Sickness.

This disease, in ancient times was supposed to be due to the possession of devils. The convulsions are very like those of children: indeed, so far as the paroxysm is concerned, it is impossible to distinguish between them, but the history of the two cases, ^{differs} greatly. The one is due to a permanent, the other in nearly all cases, to a transient cause. The attack is sometimes sudden, the patient falling convulsed, while engaged in his ordinary occupations, or in sleep. Sometimes there are premonitory symptoms, as dizziness, headache, loss of appetite, ~~depression~~ depression of spirits, imperfections of vision, especially ^{or partial} spectral illusions, imperfections of speech. Sometimes a peculiar, prickling sensation is felt, commencing in some part of the body, often an extremity, and thence proceeding to the brain, where the convulsion takes place. This has received the name of the aura epileptica. When the attack is sudden, the patient will ~~unconsciously~~ put his hands to his head, and fall in a convulsion, either general or partial. He appears as though about to suffocate - foams at the mouth - the tongue is protruded through the firmly closed jaws, and is often seriously injured. The countenance is distorted and congested, the respiration irregular, and at times suspended, there is utter unconsciousness, and the patient throws himself violently from side to side. The duration of the fit is from eight to ten minutes. After the fit, if severe, the patient generally lies in an unconscious or stupor condition, from which he recovers at variable intervals, or before recovery, another fit may give rise to all the effects above described. In the milder forms, there is merely a slight

shivering and rigor without any affection of the senses. The disease often begins in this way, the attacks growing more and more severe, till a distinct convulsion takes place. The convulsions occur at various intervals sometimes daily - ^{sometimes} ~~again~~ only at intervals of weeks or months, or even a year. They may come on at almost any age. They generally ~~begin~~ ^{commence} at about the age of puberty, but are seen as late as 60 or even 80. The time of day at which the paroxysms occur, is in some patients very regular. Very often it comes on during the night, generally just after midnight. I have known one case, where the attacks always came on at this time, and the patient, a young lady, never knew the nature of her disease. The effects of ~~confirmed~~ epilepsy on the mind, are of the most painful character. The memory is impaired, or entirely lost. The patient becomes morose, sullen, and intemperate. Sometimes, idiotic. Sometimes insane, and this insanity is of the most hopeless kind. Sometimes paralysis, and in some cases, apoplexy, follow this disease. As to the seat of epilepsy, there is a difference of opinion. That cases have occurred, and not infrequently, ~~of~~ confirmed epilepsy, where no appreciable lesion of the brain could be found after death, is too well attested, to admit of doubt. In many cases however, some irregularity in the conformation of the skull, either congenital, or from injury, will be seen. A fall in childhood, fracturing the inner table of the skull, exostosis - disease of the ethmoidal bones, are often, but by no means uniformly found. Mr. Brown Sequard, is of the opinion that the seat of the disease is often in the spinal cord. He found that in guinea pigs, he could produce fits resembling epilepsy, by a section of the lateral half of the spinal cord. These fits could be produced at will by touching the skin of certain parts of the face and neck, on the same side as the section of the ~~cord~~. That these fits were caused by irritation of the

Skia, was shown by the fact, that irritation of the nerves supplying the skin, did not cause a convulsion.

Lecture XVIII. Epilepsy - Chorea Sancti Viti.

We often see in adults, other convulsive attacks, which, so far as the convulsion is concerned, cannot be distinguished from those of Epilepsy. They are dependent on various causes - sometimes on irritation of the alimentary canal, as in children. They often follow irritation of the uterus. Struckards are subject to convulsions, due, as I think, to a disordered condition of the blood. This depraved condition of the blood is shown by the strong phosphorescent odor of the breath, which is very characteristic, and may perhaps help to explain what has been ^{and is} regarded as rather apocryphal, viz. inflammable condition of the breath, and spontaneous combustion. In other cases, they depend also on a depraved condition of the blood, as in Bright's disease, puerperal women, &c. &c. Convulsions are often seen in persons dying from hemorrhage, or in those who have suffered a large loss of blood. Here they would seem to depend upon a deficient supply of blood to the brain. They often arise from external irritation as tickling the soles of the feet. Powerful impressions on the ~~ear~~ ^{mind}, especially anger, fright, sometimes joy - are sometimes followed by convulsions. With regard to ~~these~~ ^{a case of convulsions in an adult} cases, the ~~history~~ ^{the} treatment and prognosis depend almost entirely on the solution of the question, whether they depend on epilepsy, or on any of the causes first enumerated. This question can only be decided by a careful examination of the history of the case. ~~The~~ ^{the} treatment of epilepsy, we have two objects in view, 1 - the management of the convulsions

2. The treatment to be adopted during the interval, with regard to the first - In the early attacks of epilepsy, it is always advisable to subject the patient to treatment - and for these reasons - Firstly, we cannot never decide with certainty in the first attacks, whether the convulsions depend on epilepsy or on some other cause. Then the paroxysm may in many instances be arrested, always a desirable result. ~~Then~~ the heat the convulsion very much as in children. Emetics should be used first. General bleeding may ⁱⁿ some cases be indicated. Leeches and cold applications to the head, should be used. After the disease has become confirmed, it is best, as a general rule, not to interfere with the patient during the convulsion, only preventing him from injuring himself.

2. During the interval, we have two points to consider - (a) - to obviate those circumstances which have a tendency to bring on an attack. All improper food should be avoided. Costiveness should be removed. The menstrual function at night, if irregular. The mind should be kept in a ~~calm~~ ^{tranquil} state. When the attack returns at stated intervals, we must try to break up the habit, ^{into} which the system has fallen. Sinec. Stramonium - Opium, have been recommended. But there are very few cases where this can be done. When the patients are warned of an attack, by an aura epileptica, we can sometimes prevent its influence from extending to the brain, by a ligature drawn tightly around the part for which the aura originates. Where this fails, sometimes amputation of the part may succeed, or cauterization. When the attack begins by a convulsive action of an extremity, independently of an aura, ligature may prevent the fit from taking place. The great object of this part of the treatment is to diminish the number of the fits. There comes a time when they will return, and often the patient seems better for it. It seems as if there were an accumulation of some power in the nervous centres which required to be discharged in this way.

when the fits arise from intemperance, although they may be as frequent
 and as severe as those arising from other causes, still in the absence of any
 injury, or organic disease, it is rarely that we cannot hold out a strong prospect
 of recovery, provided the patient abandons his stimulus. The same is true
 of nearly all ^{chronic} diseases of drunkards. They seem very superficial, and when
 they have not proceeded to organic change, ~~which they very rarely do~~ it is sur-
 prising how rapidly and how perfectly their subjects recover, when they
 refrain entirely from their accustomed stimulus. When they arise from
 irritation of the uterus, they often ultimately subside, generally after the
 functions of that organ have become suspended. Where we can assign no
 other cause, we must refer the disease to some, as yet unknown condition
 of the brain and nervous system, and which we cannot do much to remove.
 We are, from the nature of the case, obliged to form our curative treatment
 almost entirely on empirical grounds. The proper management of the diet
 rarely fails to exert a favorable influence on the disease. It should be
 strictly vegetable, taken at regular intervals, and moderate in amount.
 The production of a permanent galvanic current from the neck to one
 of the lower extremities, has been of apparent benefit in some cases. This
 is best accomplished by placing a silver plate on the side of the neck,
 and connecting it by means of metallic chain, with a zinc plate on the
 inside of the knee. The ^{cuticle} ~~skin~~, at these two points should first be removed
 by a blister. I have not been successful in the use of this agent, though others
 have. It is worth trying; in fact, anything is worth trying in this affection.
 Electro-magnetism. Counter irritation about the head, seton in the neck,
 vesication of the head, &c. have all been recommended by miles of authority.
 They are worth trying. There are a great many supposed specifics in
 this disease. I will mention them in the order of their probable efficacy.
 Salts of silver have a decided effect in some cases. The nitrate

is perhaps the best form. It may be given in as large doses as can be borne.

It must be used with caution, as when too long continued it produces a dark color of the skin. Rarely can it be continued beyond four or five weeks, without this tendency becoming manifest. It is true, that were the remedy certain this discoloration would be a very minor consideration; but it is by no means ~~so~~ the dark color is ^{certain} ~~sure~~, and permanent. The oxide ^{it} has been said ~~to~~ maybe is ~~absolutely~~ free from this objection. I am sorry to say that my experience has not upheld this statement. Zinc. This maybe best given in the form of the oxide, and maybe continued a long time. The dose is from ~~two~~ to four grains three times daily, increasing to ten or twelve grains. Arsenic - is deserving of a trial. It may be given in any of its forms. Copper. The ammoniac. has at times had a great reputation. I cannot say that I have ever seen any good effects from its use. Iron in its various forms, especially the carbonate and phosphate maybe administered. Sneligo was at one time highly recommended in doses of from \mathfrak{zj} to \mathfrak{zss} . Oil of turpentine, oil of amber &c. &c. Many other remedies, of imaginary value, are in vogue - such as fur of moles, cotwads &c. With regard to these, I think it not improbable that they may possess some antispasmodic properties. When there has been at any time, any injury of the head, especially if it was fracture, a surgical operation would be justifiable. Chorea Sancti Viti - St. Vitus' Dance - is one of the mildest and most tractable of the convulsive diseases. It is an affection of the muscles, without loss of sense, or consciousness. The convulsive action is constant, except during sleep. It occurs at about the same period of life as epilepsy, viz - in early adult life. It begins with a slight twitching of the facial muscles, affecting often the whole body.

Section XIX Chorea.

These involuntary motions are excited by any attempt at voluntary motion. Sometimes the patient

cannot walk at all. Sometimes she can run for a short distance although she is unable to walk. In eating she seizes her food nervously with the fork, and attempts to carry it to the mouth but often fails, the fork passing behind the ear, or over the head. These notions are sometimes increased, sometimes diminished by the presence of strangers. I have seen one case in which music entirely arrested the convulsive actions. They are not present as a general rule, during sleep.

The mind is usually more or less affected, shown by the often extreme irritability of the patient. Sometimes also the faculties are impaired. In this disease, as in convulsions, there is not a loss of the muscular power nor of volition - but to the volition, there is added the influence of some disturbing cause. There seems to be a contest between these two influences, sometimes one, sometimes the other predominating.

Chorea sometimes commences with convulsions, and they sometimes occur in its course. There are generally some unusual sensations about the head, such as a sense of tightness, dizziness or headache. The patients more frequently complain of a sense of oppression at the epigastrium. The bowels are generally constipated. There is often a sense of numbness in the limbs, sometimes pain. The sleep is sometimes disturbed. The arms are generally more affected than the legs, and one side of the body more than the other. Rarely however, is the affection confined to one side of the body. The disease is far more common in females than in males. The proportion being about as one to five. The age ^{at which} ~~most liable to~~ this disease is most common is about the time of puberty. That it has some connection with the great change which the system undergoes at this time,

There can be no doubt. The tendency, although greatest at the crisis, extends through the whole period in which this change is going on. This transition from childhood to puberty, is not a sudden, but a gradual one, occupying from eight to ten years. The average duration of the disease, independent of treatment, is about seven weeks. The disease is rarely, I think near fatal when uncomplicated. In all the cases of apparent death from this disease which I have seen, I have found inflammation of the pericardium. We know nothing of the pathological conditions of this disease. The changes which they may be, we cannot discover with our present powers of observation. Among the remote causes, are the affections of the mind, especially fright. In general, all those causes, which tend to depress the system, predispose to this affection. Chorea has been epidemic. Probably imitation has a good deal to do with it. If one woman in the wards of a hospital have the disease, and there be another, within sight, at all predisposed to it, she will be pretty sure to show signs of it.

Treatment. The vast proportion of cases, ~~and to a not small~~ would recover if left to themselves. Still, we can shorten the disease by proper management. Depleting measures are rarely if ever to be used. The patient should be freely purged, but depressing cathartics should be avoided. The bowels should be kept in as natural a state as possible. The remedies should be of a tonic character. First in the list, comes iron in its various forms, the best of which is the sulphate, given in as full doses as can be borne. Next comes the preparations of arsenic - then silver. The same precautions to be observed, as mentioned under epilepsy. Then coffee, especially the ammoniac. The vegetable tonics, ~~chocoma~~ strychnia, &c, are often of benefit. Cold bathing - sea bathing. Change of place, are very important in protracted cases. We see many anomalous cases, generally in old people, resembling

Chorea

resembling ~~epilepsy~~ more or less - I will give you a few cases, which I have myself seen, to ~~which~~ will illustrate my meaning. First, however, I will say a word about paralysis agitans, or shaking palsy, which very closely resembles chorea. It is almost peculiar to old persons. It consists of a shaking or tremor of the muscles, impeding voluntary motions. The tremor is less unequal and capricious than in chorea. The gait is unsteady. The patient inclines to stumble or fall forward. It is often so severe as to render the patient quite helpless. There is generally no affection of the mind, beyond what belongs to the age. In a slight degree this is a very common affection of old persons. In younger persons I have met with analogous cases. I had a patient 50 years of age, who had motions of this kind in the muscles of the face, jaws, and eyes. This had been preceded by headaches, which ceased when the affection of the muscles appeared. When these were relaxed, she became less well. The motions ceased, whenever her mind was much excited. They were also absent during sleep. Another patient, a man of about thirty, had a peculiar affection of all the voluntary muscles. ~~It~~ seemed to be a want of power to direct or control combined actions. His gait, appearance, and speech, reminded one so strongly of a drunken man, that a person, not knowing his condition, would not have hesitated to have pronounced him ~~drunk~~ intoxicated. There was no affection of the mind.

Lecture XX Apoplexy.

The other convulsive diseases are Tetanus and Hydrophobia. The consideration of the first belongs rather to the surgeon, ^{and} as I have never seen a case of the last I do not feel competent to

Describe it. I shall now pass to the consideration of the comatose affections - those in which coma is the prominent symptom. Apoplexy when complete consists in a loss of sense, consciousness, and motion. The majority of cases are not complete, and we have these symptoms varying very much in different cases. It is unfortunate that the description of apoplexy, as well as of most other diseases, is drawn from a few model cases. ~~When~~ the student attempts to apply his knowledge, in actual practice, he finds himself at a loss - very few of his cases coming up to the standard he has conceived. I propose then to relate to you a few cases of my own, to serve as ^{an} illustrations of the different forms in which apoplexy may present itself to you, in your future life -

A man, 50 years of age, ^{who had previously enjoyed good health,} was found sitting by the fire one day, leaning his head on his hands, complaining of severe headache, and some disturbance of the digestive organs. There was no loss of sense or of consciousness. The next day, he became completely apoplectic, and died in about 48 hours. On examination a large effusion of blood into the brain was found. A woman of 50, who had been in perfect health, was subjected to most powerful mental emotions from the loss of several members of her family in the course of a few weeks. She had some headache, which was referred to the excitement and distress during these weeks. Suddenly, while sitting, she lost all power of motion. There was excessive shivering, with nausea and vomiting. There was no loss of consciousness. She seemed improving for a few days, when she grew worse, and soon died comatose. The autopsy disclosed a very large effusion of blood into the cerebellum, with considerable serous effusion into the ventricles.

A man of about the same age, was suddenly seized while walking, with dizziness. This soon passed off, but in a few days he had another attack ^{similar}. These were frequently repeated, and now his faculties became somewhat impaired. He became irritable, and nervous. Suddenly, one morning, he fell in violent convulsions, and soon after died. After death, there were found

a large number of small effusions of blood into various parts of the brain. These were in various stages of recovery. A larger effusion, of recent date was found which had probably caused his death. The attacks of chiginess were supposed to have been dependent on the small effusions.

A man, 45 years of age, previously in ~~bad~~ health. ~~He~~ complained of abdominal rather than of cerebral disease. One afternoon he had a variety of strange sensations in the extremities, followed by convulsions, from which he passed into an unconscious condition. From this he soon recovered. His mind was affected, and his temper wholly changed. Six months after, he had another attack, from which he recovered, but lay in a state of great exhaustion. After another attack which came on in a few days, he died comatose. There were found several large hemorrhages into the brain, with disease of the cerebral arteries. There was also Bright's disease of the kidneys.

These might be regarded as true cases of apoplexy, yet in no one of them, were all the symptoms of complete apoplexy present; as usually described. A woman fifty years of age, was hanging out clothes on a cold day. She came in, complaining of headache. Her mind was very much confused. There was no paralysis, no loss of consciousness, no affection of the senses. Her memory was entirely gone, as respecting recent events. She knew the members of her family perfectly, calling them by name. Her speech, however was very imperfect. She was bled and purged with some relief, and slowly recovered. Her memory also returned, but she did not remember in the least, the circumstances of her attack. She was living 14 years after this attack. Another woman of about 50, had complained for a long time of severe headache, and occasionally of a sensation of numbness in the lower extremities. This numbness suddenly increased, and with it, came on, gastric

Oppression, nausea, vomiting, chills. There was no paralysis, but a weakness of the muscular power of the right side. The articulation was very imperfect - there being a want of adaptation of words to ideas. The pupil of the right eye was somewhat dilated, but both pupils were sensible to light. She was never to this day entirely recovered. A lady of about 70, rose one morning in her usual health, but noticed a want of power in ^{one} her hands, while dressing. Then soon followed a partial loss of muscular power in the corresponding foot. Sensation was perfect. The prominent symptoms were gastric. These soon subsided, leaving a partial loss of memory, and imperfect articulation. She lived three or four years, when she died from a second attack. Apoplexy then, is a suspension, to a greater or less extent, of sense, consciousness, and voluntary motion. When complete. The attack is usually sudden. Sometimes there are premonitory symptoms, as dizziness, a slight loss of muscular power &c. After a few convulsive efforts, the patient falls senseless and unconscious, with slow, stertorous breathing, a slow pulse, &c. The apoplexy may be complicated with paralysis. This may be decided by comparing the ~~automatic~~ motions of the two sides of the body. In apoplexy, though voluntary motion is suspended, yet there remain certain automatic motions, which manifest themselves on both sides of the body equally. If one side be paralyzed, there will be a difference in the two sides. In apoplexy the pupils may be either dilated or contracted. If we note a difference in the state of the pupils, it is very probable that ^{there is} a paralytic complication.

Cases of apoplexy, as we meet with them in practice, divide themselves into two classes - the sanguineous and serous. This distinction ~~has~~ as it might seem at first sight, bears no relation to the pathological condition of the brain, but is founded on certain differences in the external symptoms of the disease. The distinction cannot always be clearly made - yet it is of the greatest importance in deciding upon the treatment. In the first class,

the sanguineous. the face is congested, full and flushed - the skin hot the pulse slow & the respiration slow, full, and stertorous, and the alveolar nose fully dilated. In the serous form, the face is pale, and pinched the skin cold, the pulse maybe slow, but in most cases is rapid and feeble. the respiration is generally hurried, and interrupted by deep drawn sighs. Every ~~sign~~ ^{sign} indicates great prostration.

The duration of apoplexy is very indefinite - the length depends somewhat on the completeness of the attack. The recovery is ~~very~~ ^{very} rarely complete - usually the patient never entirely recovers. ~~and we~~ ^{the patient} can never be considered as free from the danger of another attack. In our prognosis as to the immediate attack, the following are the favorable symptoms - a mild and incomplete attack - a natural state of the eyes, control over the sphincters, which I should have said, is ~~generally~~ ^{generally} often lost - retention of the senses, consciousness, and memory. The unfavorable symptoms are the reverse of these, with many others, one of which is the pulse falling after evacuation, medicines, without any relief being obtained. The disease is most common in the middle aged and old. It does however, appear at a much younger age. I once saw a girl of 12 years of age, die from apoplexy. There was no rupture in this case, but great venous congestion. The age most liable to the disease, is from 50 to 60. Beyond this age, the attack is more likely to be paralytic. It is more frequent in males than in females. Persons, with large heads, full face, short necks, and a general plethoric condition, are said to possess the "apoplectic make," and these persons are somewhat more liable to the disease. Still it very often occurs in subjects of the opposite description. In persons of the first, ^{especially} of the apoplectic make, there seems to be a connection between apoplexy, and the enlargement of the left ventricle of the heart. What this connection is, I do not presume to say. Among the predisposing causes, are high living, especially in

Cause of the "apoplectic diathesis" and general inattention to the laws of health. Among the exciting causes are any sudden excitement, especially of the passions, as anger. The depressing passions act rather, as predisposing causes. Exposure to heat, as to the direct rays of the sun. Perhaps the most common ^{direct} cause, especially in persons of a full habit, is indigestion. In the treatment, we must distinguish carefully the two general forms, mentioned above. The power of reaction and the endurance of active remedies, varies greatly in the two. It is too often imagined that apoplexy is to be treated by a uniform plan, never to be lost sight of. But how are we to determine whether the case is one which calls for depleting, or for stimulating remedies? This is not always an easy question to decide. We form our opinion mainly from the general aspect of the patient, and from a close enquiry into the previous history of the case. When we have the general aspect as before described, of the sanguineous form, where the attack has been sudden, the patient having previously enjoyed good health and where there is a full pulse, the case calls for active depleting treatment. The pulse, however may be slow in the serous form - it not infrequently is so. Where, on the other hand, the patient has been unwell before the attack - when there are the general signs of great prostration - as pale face, cold skin, rapid feeble pulse, the treatment must be stimulating in its character. If we determine that the case belongs to the first class, we should freely bleed the patient from the arm, and apply leeches, and cold to the head. Stimulants should be applied to the skin and exhalantia (perhaps the best form is mustard). The bowels should be freely evacuated as soon as possible. If there is any reason to think that the stomach is overloaded, we must give an emetic - as a general rule, they should not be given, as the mechanical effort of vomiting, seems to increase the pressure on the brain. If, however the case be of the serous kind, we must resort to stimulants

General bleeding should be avoided, though leeching ~~the head~~ may be required. A stimulating emetic, should be followed by a cathartic of the same nature, as the Comp. & pt. of Colocynthis. ~~Before~~ Consider internal stimulants to be indicated the best are the aromatic and ammoniacal. But no general rule can possibly be laid down, to guide you in your treatment. It must be regulated by the ~~state~~ ^{state} which requires it.

Lecture XXI- Paralysis.

After all ^{immediate} ~~danger~~ ~~from~~ ~~the~~ ~~question~~ arises, can we do anything to secure the patient from future attacks? And this, I take to be a more important question, than that of the management of the attack. for it is probable that the large proportion of cases would terminate as favorably, so far as the attack is concerned, without as with treatment. But much can be done to lessen the liability to a second attack. As, however, the treatment of apoplexy, after the attack, is the same as that of paralysis, I shall defer its consideration until we have studied that disease.

By paralysis we mean a loss of voluntary motion and sensation, (meaning by this touch) - dependent either upon disease of the brain, the spinal cord, the nervous trunks, or the nervous ex. trinites. The great ~~proportion~~ of cases arise from the first named cause. The extent of paralysis varies very much. Thus we have hemiplegia, in which one half the body is paralyzed - paraplegia, in which the paralysis is confined to the lower ex. trinites, and lower part of the abdomen - or we may have it more restricted, affecting a single limb, or a single muscle. Hemiplegia is by far the most common, & therefore the most important form.

Hemiplegia, as before stated, implies a paralysis of one side of the body, - the other retaining its natural condition. It is in most cases dependent on effusion into the brain, though a perfectly distinct affection, and one which may arise from other causes. Apoplexy and paralysis, however, are very often confounded. I have seen apoplexy defined as a universal paralysis. This is not so. The distinction between the two is sometimes difficult, still it can generally be drawn. This most clearly made in those cases in which there is ~~an~~ ~~large and sudden~~ effusion of blood into the substance of the brain. The first effect of this effusion, ~~which tears up,~~ ^{like that} ~~and lacerates the brain itself,~~ is a shock, ~~which~~ caused by a blow. When this effusion is small, this shock is all, and the patient is soon apparently well. When the hemorrhage is large, the substance of the brain is lacerated, a severe shock follows, and the immediate apoplexy is the effect or manifestation of this shock. When this injury of the brain all, farther symptoms might not appear. But for its mechanical relations, the brain would heal like any other organ. But the blood cannot flow out from the injured part: therefore it cannot heal. This effusion then causes compression, which is a more permanent condition, but which generally disappears sooner or later. These two elements affect the whole brain, therefore the symptoms to which they give rise, are general, affecting the whole body. But now another element comes in. The brain is severely wounded, or is compressed at one part, more than at another. This is a local affection, and its effects are manifested in that part of the body which is under the control of the part of the brain injured. Therefore the paralysis is partial affecting that side of the body, opposite to the injured half of the brain. As before stated, even during the attack, while the patient is yet unconscious, this distinction between the paralytic and the apoplectic element can often be made out.

In another class of cases, we have the paralytic element, without the apoplectic. These are the cases, where the effusion is small, or where the hemorrhage, or serous effusion takes place at the base of the brain. These do not cover all the cases. Some are so complicated as to defy all analysis. Still they are sufficient to illustrate the proposition that apoplexy depends on the shock arising from the primary injury of the brain - paralysis from the secondary effect of that injury, by interfering permanently, with the functions of the injured part. Paralysis then is very often dependent upon apoplexy, but as stated in the last lecture the severity of the apoplexy varies much. Paralysis sometimes comes on slowly, a numbness, or loss of power in some limb being first noticed gradually increasing, till a perfect paralysis is established. These cases are more apt to have for their cause, gradual organic disease, as softening, tumors &c. Staccata, and vomiting, with gastric oppression are very common symptoms. In almost all cases there is some confusion of the mind, perhaps momentarily unconsciousness at the time of the attack. The patient, or his friends, may have noticed some slight mental trouble previously to the attack. The slight attacks of paralysis, dependent on very small effusions, are more common than you would perhaps think, as they are soon passed off, that they are not referred to the brain, mainly from the great fear which disease of that organ excites. These are followed by a deterioration of the brain, and gradual loss of the faculties. These slight attacks in old people are not of so much importance as they so often seem dependent upon some transient and slight disturbance of the nervous influence - but in persons under fifty, they render the existence of cerebral disease very probable. The phenomena of paralysis vary very much.

Sensation and voluntary motion are sometimes entirely suspended -
 or sensation may be retained, while the power of voluntary motion
 is lost - or the reverse may be the case. Again, while motion is abolished
 there may be an exalted sensibility of the affected part. Generally some
 sensation is retained, though the power of motion is wholly lost. We some-
 times see the sensation of a single limb lost, while the voluntary motion remains.
 In this case, the eye is required to direct the motions of the limb. Again,
 cases have been recorded, where sensation was lost on one side of the body,
 and voluntary motion on the other. Again we may have convulsions, either
 of the affected, or the healthy side. Though the natural motions, ^{& sensations} ~~in~~ ^{of} ~~the~~
 are abolished, still, in most cases, motions and sensations of another class
 arise. ^{spasmodic} ~~various~~ ^{workings} of the affected side may be aroused, by external
 stimuli, as electricity, cold, tickling the soles of the feet &c. Here the irritation
 is transmitted to the spinal cord, and thence by a reflex action, to the
 muscles. Powerful mental emotions often excite spasmodic motions. How
 this influence acts, it is difficult to say. In hemiplegia, the face is drawn
 at first, to one side - the side opposite the paralysis - the tongue is affected,
 the speech thick and mumbled, ~~and~~ the saliva flows ^{freely} from the
 mouth. The affected portion, if the paralysis is long continued, becomes at-
 rophied, and undergoes the fatty degeneration. The extent to which paralysis
 interferes with the various functions of the body, varies of course. Sometimes
 one limb, or one half the body, is to all intents and purposes dead -
 The mind is almost always affected. In diseases of the brain generally,
 it is not so much the higher, intellectual faculties which are impaired,
 as those of a lower order, which collect, arrange, and present material
 for the former to work with. The intellectual faculties, of course,
 are affected as the result of the impaired condition of the lower faculties.
 The memory is almost always impaired. With respect to recent

92.

events. it is almost always entirely lost.

Section XXII.



